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Tourism, conservation and livelihoods: the impacts of gorilla tracking at Bwindi Impenetrable National Park, Uganda

Christopher Guy Sandbrook

Thesis submitted in fulfilment of the requirements for
the degree of Doctor of Philosophy

University College London
University of London

September 2006

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Abstract

Integrated Conservation and Development (ICD) initiatives that seek to incorporate human needs into protected area management have become common conservation practice. A popular ICD tool is nature-based tourism, which should deliver funding for conservation and benefits to local people, thereby encouraging them to support sustainable resource management. This “ecotourism” is attractive in theory, but its performance has been understudied in practice. In particular, little is known about how benefits and costs of tourism are distributed within host communities, how tourism influences attitudes to natural resources, the environmental impacts of tourism, and how tourists differ in their impacts. This thesis investigates all of these issues, using gorilla-tracking at Bwindi Impenetrable National Park (BINP) in Uganda as a case study.

The results show that whilst tourism at BINP resulted in measurable improvements in community development indicators, there were severe inequalities in the distribution of benefits between individuals according to age, gender, education, wealth, location and social networks. Tourism benefits generally outweighed tourism costs, encouraging positive attitudes to the industry. However, many people did not feel compensated for costs of conservation, because benefits were inappropriate or because they were not seen as linked to conservation. Tourism paid for park management, but tourists were found to represent a greater disease threat to gorillas than previously realised because encounters were illegally close and some tourists were unwell. Comparing the performance of tourists, older women were found to leave the most money in the local economy, whereas younger tourists posed the greatest disease threat to gorillas.

Overall, tourism at BINP delivered surprisingly well on some of the promises of ecotourism. Nonetheless, considerable conflicts, risks and inequalities were identified. The thesis concludes by presenting a series of recommendations designed to improve the performance of tourism at BINP, and by discussing wider theoretical implications of the study.

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List of abbreviations:

AIC	Akaike Information Criterion
AIDS	Advanced Immune Deficiency Syndrome
ANOVA	Analysis of Variance
APS	African Pearl Safaris Buhoma Homestead
AWF	African Wildlife Foundation
B & B	Bed and Breakfast
BCHC	Buhoma Community Health Centre
BCRC	Buhoma Community Rest Camp
BHS	Baseline Household Survey
BINP	Bwindi Impenetrable National Park
BINP-AP	Bwindi Impenetrable National Park-Adjacent Population
BPWG	Bwindi Progressive Women's Group
BVC	Bwindi View Bandas & Gorilla Nest Rest Camp
CAC	Cronbach Alpha Coefficient
CAMPFIRE	Communal Areas Management Programme for Indigenous Resources
CARE	Cooperative for Assistance and Relief Everywhere
CBC	Community Based Conservation
CBNRM	Community Based Natural Resource Management
CBT	Community Based Tourism
CC	Community Conservation
CV	Curriculum Vitae
CSWCT	Chimpanzee Sanctuary & Wildlife Conservation Trust
DFGF	Dian Fossey Gorilla Fund
DFID	Department for International Development
DRC	Democratic Republic of Congo
DTC	Development Through Conservation
EIA	Environmental Impact Assessment
FAO	United Nations Food and Agricultural Organisation
FFI	Fauna and Flora International
GDP	Gross Domestic Product
GEF	Global Environment Fund
GFC	Gorilla Forest Camp
GIS	Geographical Information System
GLMM	Generalised Linear Mixed Model
GPS	Global Positioning System
HIV	Human Immunodeficiency Virus
HUGO	Human-Gorilla Conflict Resolution Programme
ICD	Integrated Conservation and Development
IDHS	In Depth Household Survey
IFCP	Impenetrable Forest Conservation Project
IGCP	International Gorilla Conservation Programme
ITC	Item-Total Correlation
ITFC	Institute of Tropical Forest Conservation
IUCN	World Conservation Union

JGI	Jane Goodall Institute
LC	Local Council
LMM	Linear Mixed Model
MAM	Minimum Adequate Model
MBIFCT	Mgahinga Bwindi Impenetrable Forest Conservation Trust
MEM	Mixed Effects Modelling
MGNP	Mgahinga Gorilla National Park
MoU	Memorandum of Understanding
MUZ	Multiple Use Zone
NGO	Non-Governmental Organisation
NP	National Park
NTFP	Non Timber Forest Product
PA	Protected Area
PCA	Principle Components Analysis
PCV	Peace Corps Volunteer
PMAC	Park Management Advisory Committee
PPC	Parish Park Committee
PPT	Pro-Poor Tourism
PRA	Participatory Rural Appraisal
PWR	Participatory Wealth Ranking
RA	Research Assistant
RS	Revenue Sharing
SD	Standard Deviation
SE	SocioEconomic
SL	Sustainable Livelihoods
SPSS	Statistical Package for the Social Sciences
SSI	Semi Structured Interview
STD	Sexually Transmitted Disease
TA	Travel Agent
TB	Tuberculosis
TO	Tour Operator
TRS	Tourism Revenue Sharing
UCOTA	Uganda Community Tourism Association
UK	United Kingdom
UNCST	Uganda National Council of Science and Technology
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Social and Cultural Organisation
UNP	Uganda National Parks
UPDF	Uganda People's Defence Force
UPE	Universal Primary Education
USh	Ugandan Shilling
UWA	Uganda Wildlife Authority
WCS	Wildlife Conservation Society
WMA	Wildlife Management Area
WTO	World Tourism Organisation
WWF	Worldwide Fund for Nature

Chapter 1: Introduction: Conservation, Development and Tourism

1.1 Chapter summary

This chapter introduces the thesis and reviews the relevant literature. It begins by considering the historical background to the conservation movement and how the practice of conservation has changed over time (Section 1.2). It then reviews the analogous process for the development movement, and introduces the concept of Integrated Conservation and Development (ICD; Section 1.3). Section 1.4 demonstrates the central position of tourism in ICD, explaining the theoretical promise of ‘ecotourism’ as a tool for delivering ICD goals. The Chapter then considers some of the problems with the delivery of ICD and ecotourism in practice (Section 1.5), before addressing the role of tourists in determining impacts (Section 1.6). Finally, the Chapter summarises the literature reviewed, gives the aims of the thesis and explains the structure of the remaining chapters.

1.2 Changing paradigms of conservation practice

1.2.1 What is conservation, and why conserve?

Conservation means different things to different people, and these meanings have shifted through time as alternative interpretations have passed in and out of favour. To some, conservation is about the preservation of wilderness; areas untouched by the influence of humans. To others, it is about the protection of resources required to ensure a sustainable future for life on Earth. To still others, it is about preventing the extinction of species. These distinct interpretations of conservation reflect different ways in which value can be placed on the natural environment, either as a resource to be exploited now or in the future (‘use values’), or as intrinsically valuable in its own right (‘non-use values’; Hodge, 1995). The multiple meanings of conservation make defining the term difficult, and potentially unhelpful. Yet despite these semantic uncertainties, conservation in practice has been dominated by a single policy instrument; the declaration of Protected Areas (PAs). Adams (2004) calls this the “‘big idea’ of conservation throughout the 20th century”, and it remains central to conservation practice today (Lovejoy, 2006). The management of these areas has reflected shifts in the prevailing ideology of conservation. Early practice focused on preservation of species and the exclusion of people, whilst recent management has paid more attention to the role played by people in conservation (Adams & Hulme, 2001). These contrasting approaches are considered in the following subsections.

1.2.2 The early days of conservation: 'fences and fines'

Approaches to conservation have historically differed from place to place, and these differences reflect local ecological and social circumstances (Schama, 1995). In the heavily human-modified environment of the United Kingdom, early conservation efforts revolved around protected areas which were intensively managed, and human occupation was necessarily tolerated (Adams & Hulme, 2001). In contrast, conservation policy in North America and in Africa was typically guided by the desire to preserve pristine wilderness areas in their natural state (Adams, 2004). These wildernesses were available for use by the privileged classes as safari and hunting destinations, or for research (Mackenzie, 1987), but the presence of local people was considered incompatible with conservation goals. As a result, in the African context, local people were often excluded from PAs, and prevented from making use of resources within their boundaries (Grove, 1987). This position was based on three critical assumptions: that the presence of local people in PAs was in some way 'unnatural', that people threaten protected ecosystems through their activities, and that people threaten protected species through their activities (Adams, 2004).

Under this model of conservation practice, local people were seen as a threat against which PAs must be defended. This was achieved through exclusion and punishment, popularly referred to as 'fences and fines' (Wells & Brandon, 1992), which made some local human livelihood activities illegal (Brockington, 2002). For example, local hunting was reclassified as 'poaching', and poachers were widely portrayed as criminals (e.g. Douglas-Hamilton & Douglas-Hamilton, 1992). Under this model, conservation policy was essentially negative, "stopping people from doing things that harmed nature, and above all keeping people out of protected areas" (Adams, 2004). This approach has been described as 'fortress conservation' (Adams & Hulme, 2001) or 'coercive conservation' (Peluso, 1993). Protected areas under this paradigm are typically managed by centralised state institutions (Bell, 1987), are often militaristic in their structure and the equipment of their staff, and in some cases use direct force as a law-enforcement tool (Peluso, 1993).

The preservationist 'fences and fines' approach to conservation dominated early protected area management strategy and remains at the core of much conservation policy today. However, there has been a growing acknowledgement over the last three decades that there are considerable problems with this model. First, local people may suffer many of the costs

of conservation while seeing few of the benefits, leading them to harbour legitimate grievances against protected areas (Bell, 1987); second, people may not always present as serious a threat to conservation goals as was previously thought (Homewood, 2005b); and finally, delivering conservation goals might be easier if local people have an incentive to support PAs (Hutton & Leader-Williams, 2003). These challenges to the ‘fences and fines’ approach are discussed in the following subsection.

1.2.3 Conservation with a human face

The costs of conservation for humans can be severe. First, where their presence is considered incompatible with conservation goals, residents can be permanently evicted from PAs (Brockington & Schmidt-Soltau, 2004; Brockington *et al.*, 2006). This cost is considerable – for example, nearly 4 million people are faced with eviction from PAs in India at present (Kothari, 2004, cited in Brockington *et al.*, 2006). Second, conservation policy can prevent people from harvesting wild resources from within PA boundaries, such as meat, timber and medicinal herbs, and from growing crops or keeping livestock (Emerton, 1999). This creates potentially severe opportunity costs of conservation. For example, Norton Griffiths & Southey (1995) calculated that the Kenyan conservation estate could generate net returns of \$203 million US per year if converted for agriculture and livestock, as compared to the \$42 million US per year generated at that time by tourism and forestry. At a more local level, people living around PAs in Madagascar have been estimated to suffer net costs of \$419 US per household per year, mostly due to lost access to potential agricultural land (Shyamsundar & Kramer, 1997). This is a severe cost when compared with current annual per capita income of \$809 US (UNDP, 2006). Finally, living close to PAs can be costly because of conflict with wild animals, which can eat crops (e.g. Hill, 2000a; Weladji & Tchamba, 2003; Sitati *et al.*, 2005), eat livestock (e.g. Zimmermann *et al.*, 2005; Kolowski & Holekamp, 2006), and in some cases kill people (e.g. Nyhus & Tilson, 2004).

A particular problem for PA management is that the costs and benefits of conservation tend to have very different spatial distributions (Bell, 1987; Balmford & Whitten, 2003). Whilst many PAs provide overall benefits at the global scale, costs of conservation tend to be suffered by people living in or close to them, whereas the positive impacts of conservation (measured in terms of ecosystem services and the ‘existence value’ of extant species;

Hodge, 1995), tend to accrue to all humans equally. This inequality in the spatial distribution of costs and benefits disadvantages the people living close to PAs, which can create hostility and further problems for management (Adams & Infield, 2001).

As well as identifying the costs conservation can bring to local people, recent research has challenged several long-held assumptions about the threat which people pose to biodiversity conservation (Homewood, 2005b). For example, human population growth in south west Uganda has widely been assumed to drive deforestation, but archival research reveals that despite spectacular population growth, more land in the region was left fallow in 1996 than in 1945, and that more land was forested (albeit with introduced *Eucalyptus spp.*) in the 1990s (Lindblade *et al.*, 1998; Carswell, 2003). Similarly, privatisation of formerly communal land in Kenya explains more wildlife loss between 1975 and 1995 than population increases or agropastoral land use (Homewood, 2004), and the assumed link between deforestation and domestic fuelwood consumption has been shown to be flawed in Lake Malawi National Park, where deforestation is more strongly linked to commercial felling for firewood to smoke fish (Abbot, 2005).

The realisation that local people can suffer costs as a result of conservation, and that this might create ill-feeling which could put the future of PAs at risk, has led conservationists to reconsider the role of local people in conservation. Rather than attempt to exclude them, more recent developments in conservation policy have focused on strategies to mitigate costs to local people, in the hope that this will create better conditions for delivering conservation results (Adams, 2004). This is seen as particularly important given that concentrations of people and biodiversity tend to occur in the same places (Balmford *et al.*, 2001). This new perspective on local people has been further reinforced by evidence, presented above, suggesting that local people may not pose the level of threat to biodiversity previously feared. Overall, these developments have led to a clear softening in the position of conservation with respect to people living in and around PAs, meaning that over the last few decades conservationists have begun to take an interest in human development issues. Interestingly, this has coincided with a new focus on sustainable resource use and local livelihoods within the human development movement itself. This is the subject of the following section.

1.3 Changing paradigms of development practice

1.3.1 Conventional development: national economic growth

Development, like conservation, is a term with many meanings. It is widely believed to have originated as a concept in 1949, when US President Harry Truman described large parts of the world as ‘underdeveloped’, and declared a race for the Third World to catch the First (Sachs, 1999). Development at this time was taken to be about transforming ‘backward’ rural societies into urban and industrialised ‘modern’ societies (Mowforth & Munt, 2003). This was to be achieved through economic growth, mostly from state-driven industrialisation (Mowforth & Munt, 2003). This approach to development enjoyed its heyday in the 1980s, when neo-liberal economics of the Reagan-Thatcher school emphasised the importance of free-market economics and ‘trickle down’ benefits for the poor (Hettne, 2002).

The conventional approach to development described above began to come under fire during the 1980s and 1990s. Three particular areas of concern were identified. First, it took no account of the environmental impacts incurred by the large-scale extractive industry it encouraged, calling into question the sustainability of development policy (WCED, 1987). Second, it was too focused on national scale growth of economies and Gross Domestic Product (GDP), which did not necessarily translate into changes at the local scale and in the livelihoods of the poor (Hampton, 2005). Finally, it placed too much emphasis on economic change, ignoring issues of self-sufficiency, self-determination and empowerment (Scheyvens, 2002b). These criticisms fuelled the rise of a new counter-narrative in development practice, which is described in the following subsection.

1.3.2 New development: sustainability, participation and poverty alleviation

From the late 1980s up to the present day a new focus has emerged on people and on sustainability in development (Mowforth & Munt, 2003). Rather than considering national level growth, emphasis is now placed on poverty alleviation for poor people (e.g. see the DfID “eliminating world poverty” website, DfID, 2006), and on development policies which do not result in over-consumption of resources (WCED, 1987). As a result, development has begun to be seen more broadly as a process of “good change” rather than just about money (Chambers, 1997). Reflecting this new focus, researchers have developed a novel set of tools for understanding the lives of poor people, known as the ‘sustainable

livelihoods' (SL) framework (Carney, 1998; Scoones, 1998). This approach takes a broader perspective than the traditional focus on land, labour and assets of the poor, considering instead the wider spectrum of activities, assets and access which make up the 'livelihood', defined by Chambers & Conway (1992) as "the capabilities, assets (stores, resources, claims and access) and activities required for a means of living".

Under the SL approach, assets are divided into five 'capitals'; natural, physical, human, financial and social (Ellis, 2000). Natural capital includes the physical and biological resources used to generate means of survival; physical capital comprises assets created by economic production processes; human capital refers to labour available to households, including education, skills and health; and financial capital is the money available to households, and their ability to access credit (Ellis, 2000). Finally, social capital refers to "reciprocity within communities and between households based on trust deriving from social ties" (Moser, 1998, cited in Ellis, 2000). Importantly, individuals are only considered to possess these assets if they are able to gain access to them and to make use of them for the activities which make up their livelihoods (Ribot, 1998; Ribot & Peluso, 2003).

The shift in emphasis within the development movement over the last few decades towards sustainable resource use and livelihoods at the local level resulted in an increasingly close match with the emerging focus on local people within the conservation movement (Western & Wright, 1994). Having initially seemed entirely at odds with one another, it began to seem possible that 'win-win' solutions to conservation and development problems might be found. Integrated Conservation and Development (ICD) was born.

1.3.3 Integrating Conservation and Development: the silver bullet?

The increasingly convergent focus in both conservation and development on the role of people at the local scale brought about a new era of theoretical collaboration between parks and their neighbouring human communities. From the conservation perspective this was justified on the grounds that working with people made sense because communities would protect and conserve wildlife if it was in their interest to do so (Hackel, 1999; Hutton & Leader-Williams, 2003; Jax & Rozzi, 2004). From the development perspective it was based on a new focus on the rights of the rural poor and the assumption that people would be better off if they were able to manage resources sustainably and share more equitably in

the benefits of conservation (Gibson & Marks, 1995). Combined, these arguments led to the 'Integrated Conservation and Development' (ICD) hypothesis that "conservation and development are mutually dependent and failure of one will result in failure of both" (Baker, 2004). This approach has been given many names, including 'Community Based Conservation' (CBC), 'Community Based Natural Resource Management' (CBNRM), and, most popularly, 'Community Conservation' (CC; Barrow & Murphree, 2001).

ICD approaches differ from fortress conservation in two key ways. First, they emphasise the need for local people to be involved in decision making about natural resources (Adams & Hulme, 2001). This is justified on the basis that local people are more likely to support conservation if they have a say in its management (Lepp & Holland, 2006), that excluding them from the decision making process is an infringement of their human rights (Brockington *et al.*, 2006), and that they are the traditional custodians of resources and may already have viable management systems in place (e.g. hunting reserves established by African leaders in the pre-colonial era, Parker, 1984). Second, ICD creates links between resource conservation and local livelihoods, seeking ways to convert resource conservation into material benefits for local communities, and trying to compensate communities for ongoing costs of conservation (Eltringham, 1994; Albers & Grinspoon, 1997; Naughton-Treves *et al.*, 2005). Various tools have been utilised to this end, including Multiple Use Zones (MUZs) to allow harvesting of specific resources within PAs (Baker, 2004), allowing the off-take of animals for consumption within managed quotas (Nepal, 1997), and using trust funds to provide social services, such as schools, health clinics and roads, to compensate for costs (Hamilton *et al.*, 2000). However, the majority of ICD programmes have relied on the generation of revenue from an external source to fund these activities. Given the paucity of alternatives in rural areas of developing countries, in the great majority of cases the tool used to generate this revenue has been tourism.

1.4 The role of tourism in conservation and development

1.4.1 Tourism as an ICD strategy

After several decades of phenomenal growth, tourism is now widely recognised as the world's largest industry (WTO, 2004). The World Tourism Organisation (WTO) estimates that in 1950 there were 25 million international journeys made worldwide, and by 2000 this number had increased to 699 million, including a year on year increase of 4.5% in the

1990s alone (WTO, 2004). Tourism has a long history of involvement with both conservation and with development, and its role in these movements has evolved over time as they themselves have changed. Many PAs were gazetted specifically as tourist attractions, giving visitors the opportunity to see exotic animals, experience wilderness and go hunting (Mackenzie, 1987). In the African context this typically meant excluding local people, who were not considered a natural component of the landscape, and in this way tourism was at the heart of the ‘fortress conservation’ approach. From the development perspective, tourism was seen as an opportunity to generate foreign exchange and to increase GDP at the national level. This encouraged the development of ‘mass tourism’ resorts with high levels of foreign ownership, and was a central plank of the early development agenda (Mowforth & Munt, 2003).

As the conservation and development movements adopted more people-centric positions in the late 20th century, a new role for tourism was conceived. Under the ICD paradigm, parks needed to do a better job of paying their own way and realising material benefits for local people (Eltringham, 1994), and tourism was the obvious answer (Budowski, 1976). Many PAs, particularly those in Eastern and Southern Africa, already supported a lucrative tourism industry, and in the absence of revenue-generating alternatives, tourism was rapidly established as the cornerstone of ICD policy. Numerous projects adopted it, including sites in Kenya (African Conservation Centre, 2004), Tanzania (Nelson, 2004), Namibia (Barnes *et al.*, 2002), and Zimbabwe (Nepal, 1997).

1.4.2 Ecotourism

Where tourism is applied as a tool for both conservation and development simultaneously, it is often referred to as ‘ecotourism’. This form of tourism is normally considered to be nature-based and low volume, in stark contrast to the ‘mass tourism’ favoured by traditional development (Fennell, 2003). Unfortunately, ‘ecotourism’ is a contested term with many definitions, making its ongoing usefulness questionable (Goodwin, 1996; Box 1). Early definitions focused exclusively on harnessing tourism as a tool for conservation, but, in keeping with the changing emphasis in conservation and development, more recent uses suggest that ecotourism should deliver benefits to local people. As Roe *et al.* (1997) say, “...ecotourism has become widely adopted as a generic term to describe tourism that has, as its primary purpose, an interaction with nature, and that incorporates a desire to minimise

negative impacts. Implicit in the term is the assumption that local communities should benefit from tourism and will help to conserve nature in the process”.

The contemporary understanding of ecotourism as a tool for conservation and development is neatly described by the theoretical framework developed by Ross & Wall (1999; Figure 1.1). It identifies three stakeholder groups in ecotourism, namely local communities, biological diversity, and tourism itself (Ross & Wall, 1999). The framework details the ‘win-win’ inter-relationships of these stakeholder groups to be expected under the perfect delivery of ecotourism, such that all parties benefit (Ross & Wall, 1999).

Box 1: Definitions of ecotourism

“Visits to national parks and other natural areas with the aim of viewing and enjoying the plants and animals as well as any indigenous culture” (Boo, 1990)

“An enlightening nature travel experience that contributes to the conservation of the ecosystem while respecting the integrity of host communities” (Cater & Lowman, 1994)

“Responsible travel to natural areas which conserves the environment and improves the welfare of local people” (Lindberg & Hawkins, 1993)

“Tourism that involves travelling to relatively undisturbed or uncontaminated natural areas with the specific object of studying, admiring and enjoying the scenery and its wild plants and animals as well as any cultural aspects (both past and present) found in these areas” (Ceballos-Lascurain, 1993)

“Tourism which is based upon relatively undisturbed natural environments, is non-degrading, is subject to an adequate management regime and is a direct contributor to the continued protection and management of the protected areas used” (Valentine, 1991)

“Tourism that is environmentally sensitive” (Muloin, 1991)

“Purposeful travel that creates an understanding of cultural and natural history, while safeguarding the integrity of the ecosystem and producing economic benefits that encourage conservation” (Ryel & Grasse, 1991)

“Low impact nature tourism which contributes to the maintenance of species and habitats either directly through a contribution to conservation and/or indirectly by providing revenue to the local community sufficient for people to value, and therefore protect, their wildlife heritage” (Goodwin, 1996)

“The ecotourist practices a non-consumptive use of wildlife and natural resources and contributes to the visited area through labour or financial means aimed at directly benefiting the conservation of the site” (Ziffer, 1989)

“responsible travel to natural areas that conserves the environment and sustains the well-being of local people” (TIES, 2003)

Box adapted from (Roe *et al.*, 1997)

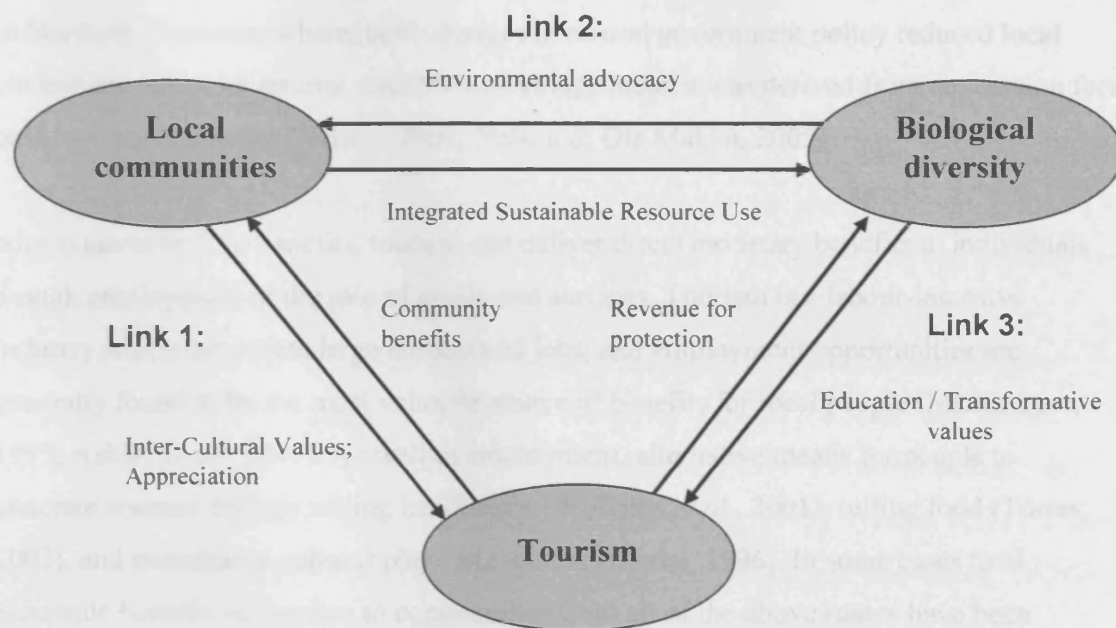


Figure 1.1: The theoretical framework for ecotourism. Adapted from Ross & Wall (1999)

Looking at the framework, it is clear that some links apply only to impacts on tourists (inter-cultural values and appreciation of local communities, and education / transformative values of biological diversity). These are external to the destination where tourism takes place, and are not relevant to the site-specific focus of this thesis. As a result they are not considered further here. Of more immediate concern at the level of the destination are the delivery of benefits to local communities (Link 1), the encouragement of sustainable resource use (Link 2), and the delivery of revenue for protection of biodiversity (Link 3). Tourism can achieve these goals in various ways, as detailed in the following subsections.

1.4.3.1 Link 1: Tourism and local communities

A common tool for transferring revenue from tourism to communities is to do so collectively, through Revenue Sharing (RS). Where the tourist attraction is owned by the state (such as a National Park), RS usually involves the distribution of a portion of visitor entrance fees to neighbouring communities. This approach is applied in Uganda, with mixed success (Archabald & Naughton-Treves, 2001; See Chapter 2 for details), and in Madagascar (Peters, 1998). Where the visitor attraction is on private or communally owned land, those controlling it can charge user fees and distribute them as they see fit. This

commonly occurs in savannah rangelands outside National Parks, such as at Ololosokwan in Northern Tanzania, where, until changes in central government policy reduced local control and financial returns, over 90% of village income was derived from concession fees paid by a private lodge (Nelson, 2004; Nelson & Ole Makko, 2005).

Alongside collective benefits, tourism can deliver direct monetary benefits to individuals through employment or the sale of goods and services. Tourism is a labour-intensive industry which can create large numbers of jobs, and employment opportunities are generally found to be the most valuable source of benefits for local people (Mansperger, 1995; Ashley *et al.*, 2001). As well as employment, alternative means for people to generate revenue include selling handicrafts (Williams *et al.*, 2001), selling food (Torres, 2003), and performing cultural plays and dances (Daniel, 1996). In some cases total economic benefits of tourism to communities from all of the above routes have been calculated to exceed opportunity costs of conservation, creating incentives to conserve (Gossling, 1999).

As well as delivering monetary benefits, tourism can bring positive change for people in other aspects of their lives (Ashley *et al.*, 2001). These can most easily be understood with reference to the different forms of capital under the Sustainable Livelihoods framework discussed in Section 1.3.2 above. At the forefront of research into such impacts of tourism has been the 'Pro-Poor Tourism' (PPT) partnership, which aims to "increase the net benefits for the poor from tourism, and ensure that tourism growth contributes to poverty reduction" (Ashley *et al.*, 2001). PPT researchers have investigated numerous case studies in Africa and elsewhere, and found evidence for positive impacts of tourism in several dimensions of livelihood capital. For example, in the human capital dimension, tourism has contributed to the provision of education in Uganda and Ecuador (Braman, 2001; Williams *et al.*, 2001) and to access to health care in Nepal (Saville, 2001). In the physical capital dimension it has contributed to improvements in roads, water and electricity at various sites in South Africa (Mahony & Van Zyl, 2001; Poultney, 2001). In the financial capital dimension it has improved access to loans and credit in Namibia (Nicanor, 2001), and in every PPT case study tourism strengthened community cohesion, improved access to information and improved market opportunities (Ashley *et al.*, 2001). Finally, in a separate

study, tourism on Yap Island, Micronesia, was found to “increase indigenous jobs, foreign exchange reserves, cultural preservation, and education” (Mansperger, 1995).

1.4.3.2 Link 2: Communities and resource consumption

The second link in the ecotourism framework holds that tourism should encourage local communities to use resources sustainably (Ross & Wall, 1999). This relies on benefits from tourism changing both attitudes and behaviours with respect to resource consumption. There are several cases in the literature where it is claimed that both these things have happened, such as at tourism sites in Belize, where local support for conservation was increased (Lindberg *et al.*, 1996), and in Thailand, where extensive tourism outreach at Khao Yai NP reduced illegal activities (Albers & Grinspoon, 1997). In other cases attitudes have changed, but the link with tourism has been complex (Gursoy & Rutherford, 2004). For example, in Costa Rica, where tourism has offered viable economic alternatives to cultivation, some land has been abandoned and allowed to regenerate, but the type of benefits eliciting this behavioural change are difficult to establish (Stem *et al.*, 2003). Similarly, around Komodo NP, Indonesia, local people linked economic benefits with tourism and generally supported conservation, but there was no explicit link between receiving tourism benefits and supporting conservation (Walpole & Goodwin, 2001).

1.4.3.3 Link 3: Tourism and biodiversity conservation

The final link in the ecotourism framework is between tourism and biological diversity. The main way in which tourism can support conservation directly is by generating revenue to pay for park management activities. This is usually achieved through the charging of fees for entry to PAs, or for access to particular species (Walpole *et al.*, 2001). Famous examples of parks which generate large amounts of tourism revenue include Masai Mara, Kenya (Walpole & Leader-Williams, 2001), and Bwindi Impenetrable NP, Uganda (Hatfield & Malleret-King, 2003), both of which generate millions of US dollars every year. It is widely believed that much potential touristic value of PAs remains unrealised (Laarman & Gregersen, 1996; Dharmaratne *et al.*, 2000). For example, parks which apparently could earn more money from tourism include Komodo NP, Indonesia (Walpole *et al.*, 2001), Kruger NP, South Africa (cashing in on the earning potential of wild dogs;

Lindsey *et al.*, 2005), Costa Rican NPs (Alpizar, 2006) and Ugandan forest reserves (Naidoo & Adamowicz, 2005).

It is interesting to note that there are far more studies in the tourism literature reporting the *potential* of parks to cover their costs through tourism rather than cases where this has actually happened. In practice, the amount of revenue which a park can generate through tourism depends on the quality of the tourism product available, and PAs which are home to ‘flagship’ conservation species (such as mountain gorillas) are generally more successful fundraisers (Walpole & Leader-Williams, 2002; Kruger, 2005). Without such species, and in politically unsettled areas, it can be very difficult to generate tourism revenue (Wilkie & Carpenter, 1999; Wilkie *et al.*, 2001).

The examples given throughout Section 1.4.3 suggest that tourism has the potential to deliver many of the benefits described by the ecotourism framework. However, they also hint at difficulties which might be encountered along the way. In fact, realising the theoretical promise of ICD and ecotourism in practice has proven extremely problematic. These difficulties are discussed in more detail in the following section.

1.5 ICD and ecotourism in practice

1.5.1 Win-win or lose-lose? ICD in action

The ICD concept relies on the assumption that ‘win-win’ solutions which conserve biodiversity and deliver local development can be found. In practice, this has rarely proved to be the case (Barrett & Arcese, 1995; Songorwa *et al.*, 2000; Wells & McShane, 2004). Whilst PAs have often been reasonably successful at achieving conservation goals, they have been particularly poor at delivering human benefits (Naughton-Treves *et al.*, 2005). This can occur because projects take a very long time to provide economic returns for communities (Barrett & Arcese, 1998), because they provide poor returns relative to illegal activities (Holmern *et al.*, 2002; Johannesen, 2005; Johannesen & Skonhøft, 2005; Johannesen, 2006) or because they are hampered by institutional problems and a lack of local representation (Alexander & McGregor, 2000).

Several underlying problems with ICD have emerged. First, human populations have proven themselves to be much more complicated than many practitioners had realised. For example, many ICD projects have made naïve assumptions about the homogeneity of participant communities, making it difficult to identify target and actual beneficiaries (Spiteri & Nepal, 2006). Second, the anticipated link between individual benefits and changing attitudes and behaviours has frequently failed to materialise (Gillingham & Lee, 1999; Songorwa, 1999; Holt, 2005), particularly where benefits for local people are not realised in a form appropriate to compensate for the costs of conservation they suffer (Emerton, 2001). Finally, there has been conflict where ICD policy has required communities to reduce their use resources in such a way that they incur economic or other costs to themselves. This raises questions about where the power to make final decisions over resource use lies (Barrett & Arcese, 1995).

The problems with ICD in practice have led to something of a backlash in the literature (Breachin *et al.*, 2002). There is a concern among conservationists that including human goals in their projects means compromising on conservation (Oates, 1999), and some development researchers have accused conservation organisations of not really being interested in human development – preferring to make reference to it in funding applications rather than deliver it on the ground (Chapin, 2004). Each side has submitted counter-arguments, and the debate rages on in several academic journals (e.g. Sanderson & Redford, 2003; Roe & Elliott, 2004; Sanderson & Redford, 2004). This conflict reflects the fact that ICD interventions in practice have enormously varying goals and founding assumptions (Barrow & Murphree, 2001). Some see conservation as a tool for poverty reduction, some think conservation should not exacerbate poverty, some think conservation cannot succeed without addressing poverty, and some think that conservation and poverty are entirely separate issues (Adams *et al.*, 2004). Clearly, ICD in practice has proven rather more problematic than ICD in theory. Unfortunately, ecotourism has fared little better.

1.5.2 Problems in paradise: ecotourism in practice

The performance of tourism as a tool for integrating conservation and development has been mixed to say the least (Honey, 1999). Tourism can have substantial negative as well as positive impacts (Mathieson & Wall, 1982; Duffy, 2002), and, as West & Carrier (2004) state, “Ecotourism may be seen as an exercise in power that can shape the natural world

and the people who live in it in ways that contradict some of the values that it is supposed to express". Numerous difficulties with each link of the ecotourism framework have emerged, some of which are outlined in the following sections. However, three general over-arching problems with tourism as a tool for ICD have become apparent. First, the tourism industry is dominated by the private-sector, and the first priority of private-sector businesses is to make a profit. This raises the question of whether supposed ecotourism operators actually care about conservation or human development, or whether they are just using the term for marketing purposes to increase their revenues (Goodwin, 1996; Mowforth & Munt, 2003). Second, many PAs at which tourism has been identified as a possible ICD tool simply do not offer an attractive tourism product. For example, many PAs in the Congo basin have spectacular wildlife, but in the face of major political unrest, very poor infrastructure and swarms of insects, tourism may not be viable there (Wilkie & Carpenter, 1999; Laurance *et al.*, 2006). Finally, tourism facilities cost a lot to build, and this investment may not be justified where returns are low (Blom, 2001), or where the risk of political instability puts this most fickle of industries under threat (Clements & Georgiou, 1998; Adams & Infield, 2001). Alongside these general problems, other challenges have emerged which are specific to each link in the ecotourism framework. These are outlined in more detail in the following section. In each case consideration is first given to problems which hamper the delivery of tourism benefits, and then to some of the relevant costs of tourism.

1.5.2.1 Link 1: Tourism and local communities

1.5.2.1.1 Problems with the delivery of benefits

Section 1.4.3.1 demonstrated that tourism can deliver substantial monetary and non-monetary benefits to people living around PAs. However, research over the last ten years has identified three major problems with the delivery of these benefits. First, a lot of revenue from tourism typically 'leaks' out of the host area, thereby failing to benefit host communities. Second, there can be severe distributional inequalities in who gains access to benefits. Finally, there can be a lack of local ownership and control over decision making. These issues are considered in turn below.

Leakage is the process by which revenue from tourism, which should in theory benefit the host economy, is instead lost to the outside world without ever being re-spent at the

destination (Walpole & Goodwin, 2000). This occurs to the greatest extent where businesses are owned by non-local individuals, and where the industry procures goods and services from outside the destination. The problem is at its worst in some of the enclave resorts associated with mass tourism (Brown, 1998), but is also severe in rural areas of developing countries, which tend to be where tourism is most commonly used as an ICD tool (Scheyvens, 2002b). At the national scale the World Bank has estimated that 55% of tourism revenues in developing countries are lost to developed countries (Boo, 1990), whilst in the Caribbean, standard leakage levels of 70 % have been reported (Pattullo, 1996). At the local level leakages are inevitably higher still, and can reach over 90% (Pera & McLaren, 1999). At the most extreme, Walpole & Goodwin (2000) report that just 1% of tourism spending at Komodo NP, Indonesia, accrues to local people living within the park. Particularly high levels of leakage are associated with high-end tourism, which tends to be externally controlled (Hampton, 2005), and with low capacity within the local economy to provide food and other supplies (Torres, 2003) or skilled staff (Simpson & Wall, 1999). Leakage is a major problem for ICD, because it reduces the potential of tourism as an incentive to local people to conserve biodiversity (Leader-Williams, 2002).

The second major problem for the delivery of community benefits of tourism is that they usually accrue to a small subset of the local population (Kiss, 2004). This reflects the fact that individuals differ in their ability to gain access to assets (Ribot, 1998; Ribot & Peluso, 2003). Well placed individuals can benefit enormously, whilst those on the periphery gain little or nothing from tourism (Scheyvens, 1999, 2002b; African Conservation Centre, 2004). This can cause severe internal conflicts within host communities (Nelson, 2004). Factors constraining access can include gender (Stonich *et al.*, 1995; Sinclair, 1997), education (Simpson & Wall, 1999), ethnicity (Stonich *et al.*, 1995), social networks (Belsky, 1999) and physical location (Walpole & Goodwin, 2000; Briedenhann & Wickens, 2004). Inequitable distribution of benefits hampers the ability of tourism to compensate for costs of conservation, and reduces its effectiveness as an ICD tool (Scheyvens, 2002b).

The last constraint on community benefits from tourism is that local people very rarely have real control over the industry in their area (Scheyvens, 1999). Where local people do not have control, it is unusual for them to receive benefits. For example, a major criticism of the celebrated Communal Areas Management Programme for Indigenous Resources

(CAMPFIRE) programme in Zimbabwe is that it has failed to devolve power to the village level (Murombedzi, 1999), or include immigrants as target beneficiaries (Dzingirai, 2003). Similarly, in Peru, a successful tourism project was undermined when the forest attraction was destroyed because of local people lacking land tenure rights (Yu *et al.*, 1997). In a particularly stark example, a successful, locally run Community-Based Tourism (CBT) project in Ololosokwan, Tanzania, was declared illegal by the central government when policy-makers attempted to impose a new 'Wildlife Management Area' (WMA). These were designed to give local people control over resources, but the way in which they were implemented actually took control away, threatening the future of tourism benefits (Nelson & Ole Makko, 2005). The lack of local control over tourism is not always due to the actions of policy makers and the industry. There can also be operational, structural and cultural limitations on the ability of local communities to participate in tourism, making it difficult to transfer control (Tosun, 2000, 2006).

1.5.2.1.2 Costs of tourism for communities

Tourism can bring costs as well as benefits to host communities. Considerable attention in anthropology has been paid to the social and cultural impacts that tourism can have for people at the destination (Stronza, 2001). For example, on Yap Island, Micronesia, tourism has been found to result in "deleterious... impacts involving human displacement, subsistence disruptions, social conflict, loss of autonomy, dependency, crime, and other disturbances of the host culture" (Mansperger, 1995). Tourism brings novel people, items and behaviours to often very isolated areas, and this can have a considerable impact on local socio-cultural norms (Abel, 2003). A common finding is that local people try to emulate the behaviour and clothing of visitors, a process which has been called 'glocalization' (Salazar, 2005). In other cases local culture becomes commodified, and communities put on 'pseudo-events' which reflect what tourists expect to see (Boorstin, 1961; Urry, 2002). Where local people retain control over these interactions such changes do not necessarily represent costs, but in some cases negative impacts are clear. For example, in a Garifuna community in Honduras, residents felt that they were losing their true culture because of its commodification for tourism (Kirtsoglou & Theodossopoulos, 2004), and a common and unpleasant consequence of tourism is the development of a sex-industry at destinations (Pattullo, 1996; Clancy, 2002). Other less well-studied costs of tourism for communities include seasonal and/or permanent increases in the price of

commodities in local markets (Coppin, 1993; Pattullo, 1996), and the problem of dependency on tourism, which can expose vulnerable people to severe risk should the industry collapse in their area (Mansperger, 1995; Ashley *et al.*, 2001).

1.5.2.2 Link 2: Communities and resource consumption

1.5.2.2.1 Factors constraining positive changes in community resource use

Given the difficulties outlined above, it should not be surprising that tourism has rarely succeeded in positively changing the relationship of local people with natural resources. Several reasons for this failure have emerged. First, where people receive benefits, they may not be appropriate to compensate them for the costs of conservation (Emerton, 2001). For example, Mgahinga NP in Uganda brings some benefits for local people (Okello, 2003), but these are insufficient to compensate for the cost of having being evicted from the National Park (Adams & Infield, 2001, 2003). Second, local attitudes are not only influenced by economic benefits, which are normally the focus of tourism interventions (Wearing & Wearing, 1999). Rather, they reflect other factors, such as access to religious and cultural sites (Heinen, 1993). Third, the greatest costs of conservation are often suffered by people who receive the least benefits from tourism, meaning they have the least incentive to change their behaviour (Gillingham & Lee, 1999; Jurowski & Gursoy, 2004). Finally, Link 2 of the ecotourism framework relies on the assumption that local people will readily substitute benefits derived from natural resources for those derived from tourism. In fact, tourism benefits are often treated as an addition to existing livelihood activities rather than as a replacement, meaning that no change in resource use occurs (Salafsky & Wollenberg, 2000).

1.5.2.2.2 Costs of tourism for communities and natural resources

Rather than encouraging local people to use natural resources more sustainably, in some cases tourism can have the opposite effect. For example, tourism can lead to considerable immigration to the destination area, as economic migrants come to seek employment (Salafsky, 1994). This can increase the demand for natural resources in the host community, and increase *per capita* consumption, both of which result in further pressure on natural resources (Scholte, 2003). The tourism industry itself can also make great demands on natural resources, such as water (Trung & Kumar, 2005). This can deprive the community

of access to resources, forcing local people to look elsewhere, potentially damaging protected resources in the process.

1.5.2.3 Link 3: Tourism and biodiversity conservation

1.5.2.3.1 Problems with the delivery of benefits

Under the third link in the ecotourism framework, tourism is supposed to deliver benefits for biodiversity conservation, primarily through raising revenue for PA management (Ross & Wall, 1999). However, as we have seen, in many cases parks do not realise as much revenue as they could (Section 1.4.3.3), the tourism product is not good enough to raise substantial revenues (Wilkie & Carpenter, 1999; Laurance *et al.*, 2006), and it can take a long time to recover start-up costs (Blom, 2001; Kiss, 2004). A further problem is determining where the money raised by protected areas goes. As well as park management authorities, claims on tourism revenue will inevitably be made by representatives of the local community and by central government, making the allocation of tourism revenues a complex issue (Adams & Infield, 2003). Overall, it would seem that tourism to date has generally failed to live up to its promise as a tool to make protected areas pay their own way.

1.5.2.3.2 Costs of tourism for biodiversity conservation

The most obvious impact which tourism can have on the environment is the physical damage caused by erosion, construction and waste disposal (Hunter & Green, 1995). Numerous examples of these impacts can be found in the literature, such as the effects of trampling on vegetation in various parks (Cole, 1993; Sun & Liddle, 1993; Obua, 1997; Ikeda, 2003), the impact of solid waste disposal in the Maldives and Nepal (Brown *et al.*, 1997), and the impacts of tourist vehicles on protected areas such as the Masai Mara game reserve in Kenya (Walpole *et al.*, 2003). As well as affecting the physical environment, tourism can have direct impacts for species, including those of conservation concern. Although many animals can become habituated to the presence of tourists, this can lead to increased levels of stress as measured by hormonal analysis (Fowler, 1999; Walker *et al.*, 2006). Tourism can affect feeding and ranging behaviour, as animals seek to avoid human disturbance (Dunstone & O'Sullivan, 1994; Klein *et al.*, 1995; de la Torre *et al.*, 2000; Remis, 2000; Muyambi, 2005; Nevin & Gilbert, 2005), and in birds it can affect nesting behaviour (Bouton *et al.*, 2005) and chick survivorship (Mullner *et al.*, 2004). A major

concern is that diseases could be transmitted from humans to wild animals (Lafferty & Gerber, 2002). This is particularly worrying in great apes, which are vulnerable to many human diseases (Johns, 1996; Butynski & Kalina, 1998; Woodford *et al.*, 2002; Goldsmith, 2005; see Chapter 7).

In the face of negative impacts, site managers have often attempted to develop tools to regulate the impacts of tourism on the environment (Boyd & Butler, 1996). These have included codes of conduct (Garrod & Fennell, 2004; and see Chapter 7), certification schemes (Honey & Rome, 2001; Rivera-Monroy *et al.*, 2004; Rivera, 2004) and spatial zoning (Lusseau & Higham, 2004). Various tools have also been developed to measure impacts, including 'ecological footprint' analysis (Cole & Sinclair, 2002; Hunter & Shaw, 2005) and indicator based impact assessments (Priskin, 2001; Li, 2004). However, despite these efforts at regulation, tourism has seriously struggled to deliver its promise on all three links of the theoretical ecotourism framework. There has been much excitement about its potential, not least among local people, but little firm evidence that tourism can deliver (Scheyvens, 2002b; Stone & Wall, 2004). One factor contributing to the disappointing performance of tourism has been the failure of both sites and researchers to consider the differential impacts of different tourist subgroups at destinations. This is the subject of the following section.

1.6 The role of tourists in determining impacts

1.6.1 Classifying tourists

The great majority of studies of tourism impacts treat tourists as a homogeneous group, creating impacts which can be measured and regulated. However, in practice very different tourists can visit single destinations, and they can have very different impacts. As Page & Dowling, (2002) state, "one of the main criticisms of many studies of the impact of tourism is that they do not pay adequate attention to the various types of tourism which induce the impacts. All too often the studies are unable to identify and understand the processes creating the impacts". This problem can be resolved in two stages: first, by categorising the tourists visiting a destination according to appropriate variables (Hvenegaard, 2002), and second, by investigating how tourists in each category differ in the impacts they have (McMinn & Cater, 1998). The former issue is considered in the present subsection, whilst the latter is considered in Section 1.6.2.

The first tourist typology was proposed by Cohen (1972), who divided tourists into four groups, namely organised mass tourists, individual mass tourists, explorers, and drifters. The groups were distinguished by motivation to travel, destinations selected and behaviour at the destination. Since this time many other typologies have been proposed, and these have made use of numerous variables to distinguish between tourists, including age, wealth, previous travel experience, risk aversion, education and motivation to travel (Lepp & Gibson, 2003; Kerstetter *et al.*, 2004). Complex statistical techniques have also been used, such as cluster analysis, multiple linear regression and self-organising neural networks (Bloom, 2004). One of the most important variables used to categorise tourists has been the choice of destination, leading to a tendency to define tourists by where they go rather than what they do when they get there. This approach has been particularly common in the study of ecotourism. For example, many studies define anybody who visits a nature-based attraction as an ecotourist (e.g. Fennell & Smale, 1992; Duffy, 2002; Higham & Carr, 2002). Other studies distinguish ecotourists from other tourists at a single site, but do so on the basis of demographics and perceptions rather than impacts (e.g. Hvenegaard & Dearden, 1998b). These classifications are not consistent with academic definitions of ecotourism, which define it by impacts rather than by where it takes place (see Box 1 above). In fact, whilst considerable progress has been made in developing tourist typologies based on characteristics and attitudes, it would seem that few studies have linked these categories to different impacts of tourism (McMinn & Cater, 1998). This is unfortunate, because as the following subsection makes clear, different tourists can have very different impacts at the same destination.

1.6.2 The differential impacts of tourists

Different categories of tourist can deliver very different impacts at single destinations. For example, different types of accommodation differ in the environmental impacts they have (Trung & Kumar, 2005), younger tourists are more likely to spread diseases (Hill, 2000b), and ‘backpackers’ are more likely to intrude into the private lives of people at destinations, causing negative social impacts (Urry, 2002). However, the most obvious, and best studied, way in which tourists can differ is in their economic impact at destinations.

Developing country tourism policy is often based on the assumption that high-end mass tourism is best because it brings in the most foreign exchange (Hampton, 1998, 2005).

However, conventional tourism can be inappropriate in the developing country context, especially for wildlife-based holidays (Brown, 1998), and the focus on high-end tourism can make it difficult for local people to access benefits of tourism. As Liu & Wall (2006) put it, "local residents are frequently under-represented in the tourism development, both as investors and decision makers. This is because they lack knowledge of tourism and associated skills, and because of the priority placed upon economic growth by the policy makers, with little concern for equity". Indeed, several studies have demonstrated that 'low-end', 'backpacker' style tourists can actually have considerable positive impacts for local people, because less of their spending leaks out of the area, because they stay longer, and because local people have the capacity to provide the type of services they require (Hampton, 1998; Scheyvens, 2002a). Other studies have found that younger, lower budget tourists tend to be more resilient to perceived risk, and return quicker to destinations after political or ecological disasters (Sonmez & Graefe, 1998; Elsrud, 2001; Lepp & Gibson, 2003). This is not to say that there is no place for higher-end tourism. In fact, several studies have found that encouraging a wide mix of tourists might give the best chance of delivering economic benefits to destinations (e.g. Loon & Polakow, 2001; Stoeckl *et al.*, 2006). Overall, it seems clear that the role of tourists in determining the performance of tourism is an important but under-emphasised issue.

1.7 Summary

1.7.1 Problems with existing ecotourism research

The literature reviewed in this chapter demonstrates that tourism has the theoretical potential to deliver benefits to people living with PAs (Section 1.4.3.1), to change their relationship with natural resources of conservation concern (Section 1.4.3.2), and to directly support conservation activities through fundraising (Section 1.4.3.3). However, it also reveals substantial difficulties with the delivery of these positive outcomes, and numerous costs which tourism can bring to both people and natural resources (Section 1.5.2). There are many useful case studies examining specific links in the theoretical framework for ecotourism (Ross & Wall, 1999; Figure 1.1), but it is clear that there remain considerable weaknesses in studies published to date, some of which are outlined below.

First, research into Link 1 (between tourists and local people) has placed a lot of emphasis on leakage, whilst generally ignoring the costs of tourism for local people, the distribution

of benefits at the local level, and factors constraining access to benefits (Ashley *et al.*, 2001). Studies which fail to consider these issues risk categorising tourism projects as beneficial for local communities when in fact they are anything but. Second, research into Link 2 (between local people and biological diversity) has generally failed to consider the relationship between costs and benefits of tourism and changing resource use at the individual level. Particularly lacking is evidence of cases where the benefits from tourism are appropriate and sufficient to compensate for the costs of tourism and conservation. Research into Link 3 (between tourism and biological diversity) is generally more satisfactory than that into the first two dimensions of impact. However, studies have rarely measured the ability of PAs to raise funding through tourism in reality rather than in theory, and very few studies have asked whether revenue generated is sufficient to justify negative environmental impacts of tourism. Finally, insufficient attention has been paid to the considerable differences between tourists in the impacts which they can have at destinations, and the implications of these differences for management.

Whilst the above shortcomings are of concern, the most serious problem with ecotourism research to date is the lack of studies which consider all of the links in the theoretical framework together. Ecotourism is supposed to deliver conservation and development benefits at the same place and at the same time, but unless studies adopt a holistic and interdisciplinary approach it will not be possible to judge the success or failure of ecotourism in practice.

1.7.2 Research aims

This thesis seeks to address some of the weaknesses of existing tourism research identified above by analysing the impacts of gorilla-tracking tourism at Bwindi Impenetrable National Park, Uganda. This is achieved by pursuing the following specific research aims:

- To carry out a differentiated analysis of the relationship between tourism, local people and biological diversity at BINP
- To analyse the relationship between tourist characteristics and their social, economic and environmental impacts
- To make recommendations for improving the performance of tourism as a tool for conservation and development at BINP and elsewhere

1.7.3 Thesis structure

The thesis is organised around the structure provided by the theoretical framework for ecotourism (Ross & Wall, 1999; Figure 1.2).

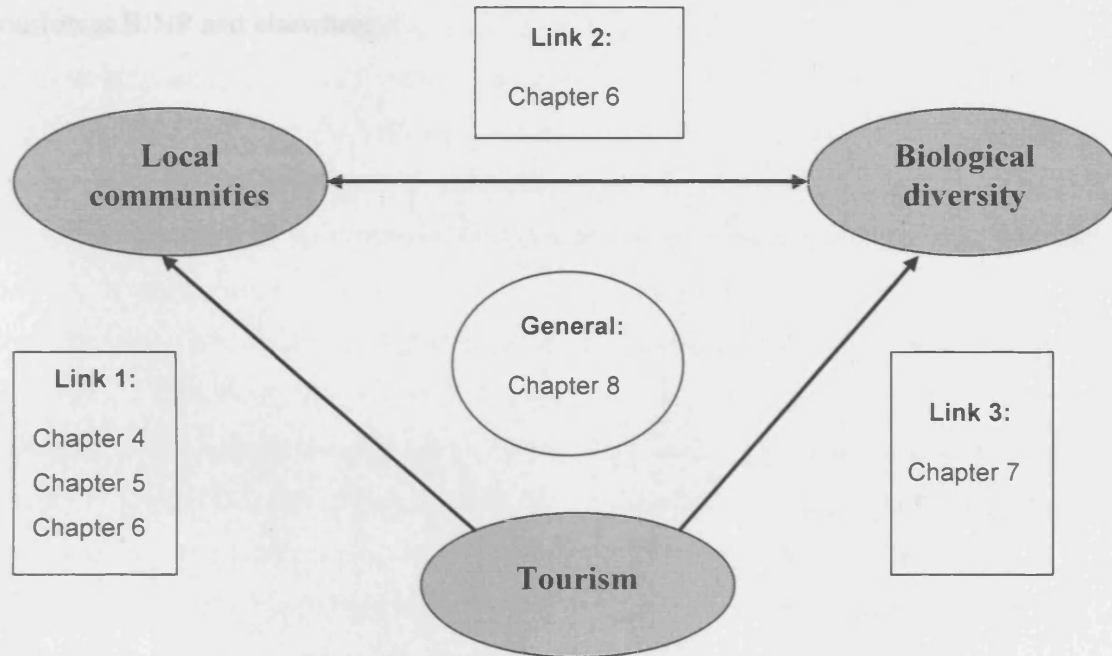


Figure 1.2: The structure of the thesis as it relates to the theoretical framework for ecotourism (adapted from Ross & Wall, 1999)

Chapter 2 introduces the study site, giving a comprehensive review of existing studies into BINP and gorilla-tracking tourism. Chapter 3 presents the general methods used throughout the data section of the thesis. Chapters 4, 5 and 6 consider the socioeconomic impacts of tourism at BINP. Chapter 4 focuses on the value of tourism to the study area as compared to other sources of revenue, and the extent to which the mean socioeconomic status of the local population is consistent with predicted impacts of tourism. Chapter 5 disaggregates the impacts of tourism within the community, considering the distribution of tourism benefits between individuals and households, and analysing factors constraining access to benefits. Chapter 6 investigates the costs of tourism and conservation for people living in the study area, and considers the extent to which tourism has influenced the relationship of local people with the National Park. Chapter 7 addresses the direct impacts of tourism on biological diversity at Bwindi, focusing on revenue raised for conservation and the risk of diseases being transmitted to gorillas. Chapter 8 examines the role of tourists in determining impacts, applying various techniques to classify tourists and to disaggregate

the impacts of each group. Finally, Chapter 9 draws the findings of the data chapters together, considering the extent to which tourism at BINP delivers conservation and development outcomes, and making recommendations for improving the performance of tourism at BINP and elsewhere.

Chapter 2: Study Site

2.1 Chapter summary

This chapter introduces the site at which research for this thesis was carried out: Bwindi Impenetrable National Park (BINP), Uganda. Before considering the relationship between tourism, local people and the National Park, it is necessary to understand something of the local social and biological context, and the history of the tourism industry in the area. This chapter aims to provide such a contextual foundation upon which the rest of the thesis can be built. It begins by describing the physical location (Section 2.2) and environmental characteristics (Section 2.3) of BINP, explaining why conservationists consider it to be so important. It then moves on to consider the local human population, focusing on the dominant Bakiga ethnic group in the study area (Section 2.4). Section 2.5 considers the history of interaction and conflict between local people and the forest, and some of the ICD interventions which have been designed to resolve this conflict. Finally, Section 2.6 introduces the history and structure of the gorilla-tracking tourism industry at BINP, the most high-profile ICD strategy implemented at the park.

Most of the information presented in this chapter is drawn from the extensive literature relating to BINP (much of it reports from Non Governmental Organisations (NGOs) and consultants). However, where specific references are not given, use is also made of primary data collected during fieldwork for this thesis. These data were gathered through semi-structured interviews with key informants (such as camp managers or group leaders), through surveys of tourism related businesses in the study area, and through participant observation and accompanying note taking. These methods are described in more detail in the following chapter.

2.2 Location of the study site

BINP is located on the edge of the western rift valley between latitude 0°53' to 1°8' S and longitude 29°35' to 29°50' E in south west Uganda (Figure 2.1). The park straddles three administrative Districts: Kisoro to the South, Kabale to the East, and Kanungu to the North¹. Data collection was carried out in six villages within Mukono parish, Kanungu district, at

¹ Kanungu district was created in 2001 when the former Rukungiri district was divided into two parts (Government of Uganda, 2005). The new Rukungiri district no longer borders BINP.

the North West corner of BINP, about ten hours drive from the Ugandan capital, Kampala, and twenty minutes drive from Butogota, the nearest town with national transport connections. The National Park headquarters are located within Mukono parish, as are the great majority of tourism facilities. The site of tourism at BINP is often referred to as ‘Buhoma’, which is in fact the name of the largest village within Mukono parish (shown in Figure 2.1)².

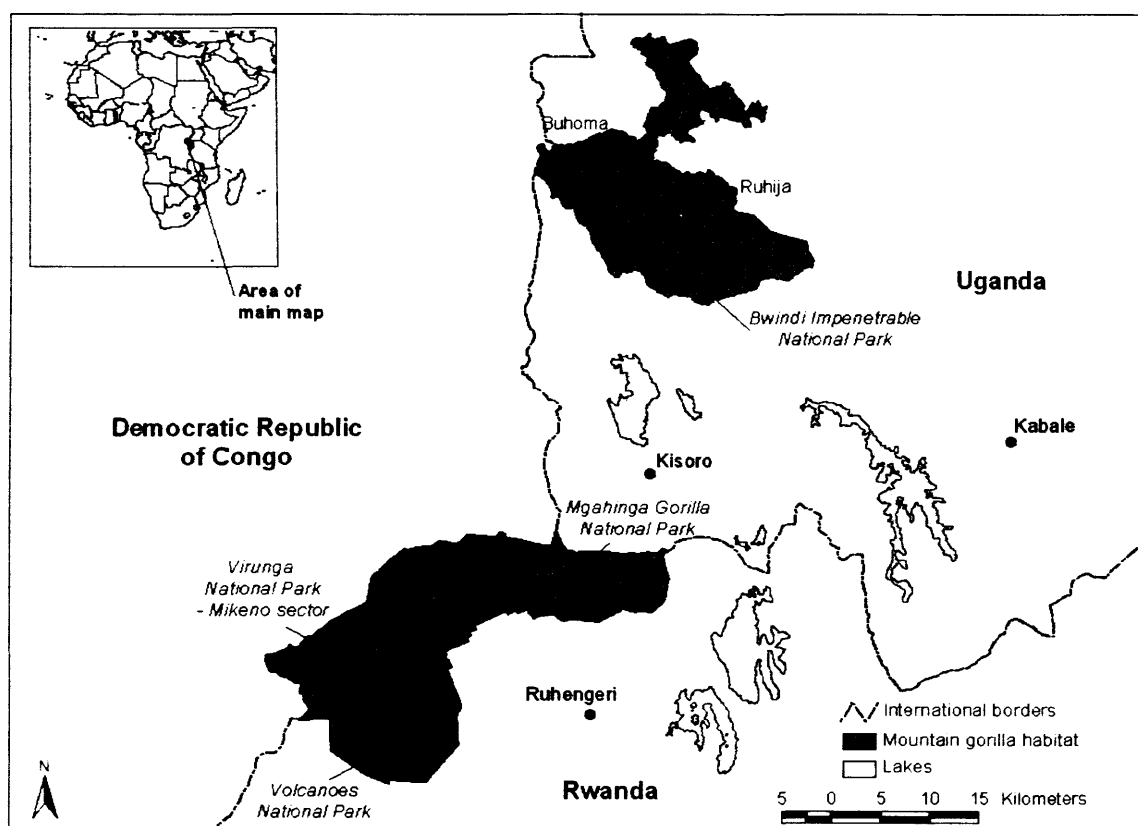


Figure 2.1: Map showing the location of BINP and the other mountain gorilla range parks in Uganda, Rwanda and DRC (IGCP, 2005). Fieldwork was carried out at Buhoma on the north-west side of BINP

2.3 Physical and biological characteristics of BINP

2.3.1 General description

BINP is a small forested park covering a total area of 321km² between 1160m and 2607m above sea level (UWA, 2001). The name of the park is derived from both local and non-local terms. ‘Bwindi’ has its roots in a Rukiga³ word meaning “dark, fierce and isolated”

² The park headquarters and six of the seven tour camps in Mukono parish are in fact located in Nkwenda village. Buhoma village is about 3 kilometres from the park gate and has just one tour camp. See section 2.6 for a more detailed description of the study area and the tourism industry

³ Rukiga is the main local language spoken around the park. See section 2.4.2 for more details

and is the name of a large swamp within the park, whereas ‘Impenetrable’ was applied to the forest in the 1940s by British colonial authorities (Namara, 2000; Baker, 2004). The park comprises a series of steep sided valleys, with swampy river beds in the valley bottoms and extensive forest cover on the valley sides and ridge tops. The habitat within the park varies with altitude, with medium altitude moist evergreen forest in the lower northern section and high altitude forest in the south. The latter habitat type, also known as afro-montane forest, is extremely rare, and BINP represents one of the best examples of this ecosystem on the African continent (UWA, 2001).

2.3.2 Flora and Fauna

Bwindi is believed to have acted as a Pleistocene refugium, and this has made it an extremely important area for biodiversity and endemic species within Uganda (Hamilton *et al.*, 2000). The park is home to over 200 tree species, at least 120 mammal species (including 7 diurnal primates), 346 bird species, 14 snake species, and 27 species of frogs and toads (UWA, 2001). Many of these species are endemic to Bwindi itself or to the Albertine rift, making Bwindi the most important forest in Uganda from a conservation perspective (Howard, 1991). Most famously, BINP is home to around half of the world population of mountain gorillas (*Gorilla beringei beringei*⁴). These apes are closely related to humans, and are much rarer than their lowland cousins, with the best estimate of current abundance putting the total population (split between the forests of the Virunga Massif and BINP) at around 710, with 324 individuals in the Virunga parks and 292 individuals in Bwindi itself (McNeilage *et al.*, 2001)⁵. As a result of its restricted range and small population, the species is listed as critically endangered in the IUCN Red List of Threatened Species (IUCN, 2004). The combination of the general importance of BINP for biodiversity conservation and its population of mountain gorillas led to the park being declared a UNESCO world heritage site in 1994 (UNESCO, 2005).

⁴ Until recently the mountain gorilla was considered a subspecies of the lowland gorilla *Gorilla gorilla*, but it has now been granted species status in its own right as *Gorilla beringei* (IUCN, 2004)

⁵ The BINP census quoted here was carried out in 1997 and is therefore somewhat out of date. A new census was carried out in early 2006, but the results have not yet been published. However, early analysis suggests the population of gorillas at BINP has increased slightly (A. McNeilage, *personal communication*)

2.3.3 Climate

The Kigezi highlands of south west Uganda are very wet, and Bwindi is no exception. The park receives in the region of 1450 mm of rain per year, falling particularly heavily during the minor wet season from March to May and the major wet season from September to November (Nkurunungi *et al.*, 2004). The forest within BINP acts as a water catchment area, soaking up rainfall and releasing it at a steady rate through the network of rivers flowing from the park and as rain. In this way the park provides an important ecosystem service to local farmers (UWA, 2001). Unlike rainfall, the temperature at Buhoma is remarkably constant around the mean maximum daily temperature of 20.1°C, with the range of mean monthly temperatures being less than 2°C throughout the year (Nkurunungi *et al.*, 2004).

The forest contained within BINP is of great significance as a biological resource both locally and globally. It is home to a large number of endemic and threatened species of conservation concern, including the mountain gorilla, and its protection is considered to be important by the conservation community and policy makers within Uganda. However, like many forest PAs around the world, the park exists as an isolated patch of habitat in an otherwise agricultural landscape densely populated with humans (DeFries *et al.*, 2005). The history of BINP is closely tied to that of the neighbouring human population, and this population is the subject of the next section.

2.4 The local human population

2.4.1 History of human presence and population growth

The area surrounding BINP has a long and complex history of human habitation. The extant human group with the longest history of ancestral occupation is believed to be the Batwa, who belong to the more general group of People of the Central African forests (Lewis, 2000)⁶. In the pre-colonial era the Batwa were nomadic hunter-gatherers who ranged through the forest and wetland areas hunting for meat and collecting plants for subsistence (Lewis, 2000). They are believed to have been resident at a low density in the area of what is now BINP for tens of thousands of years, although the precise duration of their presence cannot be determined accurately (Kabananukye & Wily, 1996).

⁶ The Batwa are often referred to as “pygmies”, a term which can be considered offensive. In this thesis they are always referred to as Batwa, except where quoting from other sources.

Around 2000 years ago Bantu agriculturalists began arriving in the area (Ehret, 2001), attracted by the ideal conditions for cultivating bananas (Schoenbrun, 1993). From this nascent group of Bantu immigrants emerged the Bakiga group (Schoenbrun, 1998), which is now dominant, accounting for 90% of the population around the park (UWA, 2001; Plumptre *et al.*, 2004). Other groups represented around BINP include the Bafumbira (9.5%; mostly in Kisoro district to the south of BINP), and a small number of Bahororo, Bahunde, and recent Congolese immigrants (UWA, 2001). The sedentary, agricultural livelihoods of the Bantu immigrants allowed their population to grow as compared to the Batwa, who are now in an extreme minority, with just a few hundred individuals living in small settlements scattered around the park. Their language has been lost, and their livelihoods increasingly resemble those of the Bakiga amongst whom they now live (Lewis, 2000).

The human population in south west Uganda undoubtedly grew substantially from the time of the first Bantu immigration 2000 years ago to the beginning of the 20th century, but during the 20th century the growth was spectacular. The population of the former Kigezi district⁷ more than doubled between 1921 and 1959 (Carswell, 2003), and the population of the former Kabale district⁸ further increased by 90% between 1948 and 1980 (Butynski, 1984). Human population densities in the region recorded for the 1991 census reached levels of 639 per km² in Gisozi parish adjacent to Mgahinga Gorilla National Park (MGNP), and were an average of 125 people per km² in what is now Kanungu district (Baker, 2004). Provisional results from the 2002 Housing and Population Census suggest that populations have increased further, with Kanungu district up to 160 individuals per km² (Plumptre *et al.*, 2004). These population densities are some of the highest seen in rural areas on the African continent, and are believed to be rising further at present (UWA, 2001).

2.4.2 The Bakiga

The dominant human group around BINP is the Bakiga. The Bakiga are primarily agriculturalists, relying on subsistence crops for food. Most households keep some livestock, but these are not as significant as crops for local livelihoods (Plumptre *et al.*, 2004). The Bakiga (and now the Batwa) speak a language called Rukiga, which is very

⁷ Kigezi district comprised the area now covered by Kisoro, Kabale, Kanungu and Rukungiri districts

⁸ The former Kabale district replaced the former Kigezi district

similar to the languages of the neighbouring Banyankore and Bafumbira groups. English is the official language of Uganda and in theory the language of education, but only the better educated Bakiga speak English well. The great majority of adult Bakiga in rural areas speak only a few words of English or none at all⁹.

Bakiga society is patrilineal, with most families living in male headed households. The overall tribe is subdivided into a large number of different clans, and these tend to be geographically clumped in space such that each village is dominated by members of the same clan (Ngologoza, 1998). Clan membership is inherited from father to son, and it is forbidden to marry a fellow clansperson (Ngologoza, 1998). As a result a patrilocal marriage system operates, with women tending to migrate short distances out of their natal village to marry into a different clan (Ngologoza, 1998). Traditionally the Bakiga were extremely polygamous, with wealthy men likely to marry five or more wives (CARE, 1994). More recently, under the influence of colonial and post-independence administrations and in particular the Christian church, monogamy has become more common. Nonetheless, polygamy still occurs, particularly among those who have received no formal education (CARE, 1994). Historically, Bakiga society was heavily stratified and hierarchical, with a king in overall control of the tribe (Ngologoza, 1998). Whilst formal rule is now organised by the national government in Kampala, the Bakiga retain a strong sense of local hierarchy and respect for chiefs and elders.

Certain overt manifestations of Bakiga culture, such as traditional dress and some rituals, have been lost during the past century (Ngologoza, 1998). However, there remains a strong sense of tribal identity and culture, with traditions such as the payment of marriage dowries and the veneration of the first harvest of millet remaining deeply important (CARE, 1994, Ngologoza, 1998). The Bakiga also have strong bonds with sacred locations and objects, many of which are found in or derived from the forest contained within BINP. Access to these sites is now severely restricted, and this has been a source of conflict between the community and the park authorities (see section 2.5)

⁹ A detailed description of Bakiga demographics, education and housing in the study area and around BINP is given in Chapter 4.

2.4.3 Local livelihoods

The Bakiga operate a classical Great Lakes production system of subsistence agriculture (Schoenbrun, 1993). Households grow a range of crops for home consumption, with the wealthy including in their crop portfolio one or two cash crops such as tea. Excess food crops are sold or exchanged locally for money or labour. Crops grown almost universally include bananas, beans, maize and sweet potatoes, and many households also grow millet, ground nuts, cassava, sorghum and yams. Fruits other than banana commonly grown include avocados, mangos, guavas, pineapples and jackfruits. Eucalyptus wood lots are widespread, with wood produced being used domestically (for firewood or construction) or sold. Crops are often planted together, and it is common to see yams or beans growing beneath banana plants. The most important cash crop in the study area is tea. Tea can only be grown by farmers to the north of the park because this is where the sole processing factory in the region is located. Coffee is also grown as a cash crop but is of greatly reduced importance following a major disease epidemic in the region during the early years of this decade. Most farm work is carried out by women, particularly weeding which men never do. Some other work such as planting and harvesting is shared to some extent, and men are usually responsible for clearing fallow land or new fields.

Most households keep a small number of livestock, commonly goats, chickens, pigs, and cows, of which the latter two are by far the most valuable (further details of livestock keeping are given in Chapter 4). Livestock are commonly sold for cash, or used to pay dowries upon marriage. Animals are grazed on pasture, which can be a considerable distance away from the family home. Herding is often done by hired labourers, or by children on their return from school.

There are some opportunities for non-tourism paid employment around BINP, but they are scarce. Many employment opportunities are with small businesses found in trading centres, such as bars, shops, butchers and brick-makers. Often the individuals working in these jobs own the business themselves. Most manual jobs such as butchery or charcoal burning are usually done by men, whereas other work in shops or bars is often done by women. Other non-forest based income generating opportunities include practicing traditional medicine or brewing banana beer or spirits (Plumptre *et al.*, 2004). These activities are almost exclusively performed by men.

2.4.4 Pressure on land and the forest

The Bakiga own their land according to customary land tenure arrangements, with only the wealthiest individuals holding formal deeds. As in many parts of rural Uganda, individual land holdings are typically small and fragmented (Ellis & Bahiigwa, 2003). Land is inherited from father to son, resulting in further fragmentation of plots when no new land is available and a father leaves several sons behind him. Boundaries of plots are typically demarcated with a row of trees or shrubs known to the neighbouring landholders. Houses are spread widely in space, with clumped buildings only found at the trading centres which mark the centre of each village. However, whilst some land is left fallow each year, particularly areas used to grow millet, almost no cultivable land outside the National Park is unclaimed. As a result the landscape resembles a dense patchwork of small fields and plantations (Figure 2.2).



Figure 2.2: A typical area of community land in the study area just outside BINP. In the extreme foreground is tea, below which is a house surrounded by banana plants. Below this is a eucalyptus woodlot. Across the valley are small fields, beyond which is a large banana plantation sheltering numerous households. The steep slopes above are mostly cultivated with millet or left fallow. The forested slopes at the upper-right corner of the figure are inside the National Park.

People around BINP rely on timber for both construction and for firewood. Consumption of wood for heating and cooking in the area has been estimated at 140,000 m³ per year (Cunningham, 1992), most of which (85%) is produced from farmers' woodlots (Kamugisha *et al.*, 1997). Nevertheless, there is a shortfall in available wood, and this creates a pressure for timber harvesting from the Impenetrable Forest itself. In the past, this resulted in illegal pitsawing through a very large part of the forest (Butynski, 1984). Timber is not the only resource traditionally collected from the forest. The Bakiga also carry out other forest based livelihood activities such as hunting, handicraft making, beekeeping, mining (usually gold) and collecting herbs for traditional medicine (Namara, 2000), all of which can have a potentially detrimental effect on the forest and its resident biodiversity. This extensive use of forest resources by local people in a situation with no buffer zone creates ideal circumstances for conflict (Lynagh & Urich, 2002), and makes the relationship between the people and the forest of great importance.

2.5 People and the forest

2.5.1 The history of human impact and conservation efforts at Bwindi

The earliest evidence for forest clearance in south-west Uganda dates back to beyond 4,800 years before the present (Hamilton *et al.*, 1986), and by 2000 years before the present significant deforestation had begun in the area (Taylor, 1990). These clearances are believed to have been carried out by Bantu immigrants, and signs of their iron works around what is now BINP have been dated back to the first millennium BC (Ehret, 1998). By 900 years before the present much of the farmed landscape was “virtually treeless” (Hamilton *et al.*, 1989). As Carswell (2003) points out, this early impact on the natural habitat of south west Uganda calls into question the commonly held belief that deforestation in the region is a mostly 20th century phenomenon driven by a rapid growth in the human population since 1900. It is interesting therefore to ask why Bwindi itself was not cleared many hundreds of years ago, as was so much of the Kigezi highlands. The answer probably lies in a combination of the difficult terrain in what is now BINP, religious beliefs of local people (Sembajjiwe, 1995), and the impact of tribal tensions in the area, which may at times have let parts of BINP uninhabited (Hamilton *et al.*, 2000).

By the early 20th century Bwindi forest was being selectively logged for valuable hardwood timber species, such as mahogany. Faced with this pressure, the forest first received

protected area status in 1932, when it was declared a Forest Reserve by the British colonial administration (Baker, 2004). At this time the forest extended well beyond the boundaries of the reserve, but as the century wore on, the forested area around what is now the National Park declined considerably – by as much as 29% in the period between 1954 and 1991 (Scott, 1992, cited in Hamilton *et al.*, 2000). In 1961 the forest was declared a Game Reserve (Plumptre *et al.*, 2004), recognising the value attached to the mountain gorilla, which had by then achieved international fame (Adams, 2004). The reserve regulated activities such as pitsawing, with individual sawyers requiring a licence to operate (Butynski, 1984). Unfortunately the following two decades saw great strife in Uganda under the regimes of Milton Obote and Idi Amin, meaning that the enforcement of regulations governing the use of forest resources was minimal (Butynski, 1984).

By the late 1980s, when the new President Museveni had restored some normality to Uganda's political climate, it was clear that Bwindi forest was in danger of being severely degraded. Between 1947 and 1991, 61% of the forest had been intensively pit sawn for valuable timber species (Howard, 1991), and there had been extensive illegal trapping of wildlife for meat and mining for gold (Butynski, 1984). The edges of the forest had contracted, and almost no native tree species remained outside the forest itself¹⁰. In response to this situation it was decided to upgrade the level of protection for Bwindi by gazetting it as a National Park, and BINP was formally established in 1991 (UWA, 2001).

The declaration of Bwindi as a National Park had substantial implications for the people living around the forest. Although very few people lived within the area which was gazetted¹¹, local people made substantial use of forest resources, as described above. This use had been either legal or tolerated in the past, but the declaration of the park (which took place without any consultation of local people) saw an immediate and total ban on the use of all forest resources, and indeed local people were not even permitted to enter the forest without explicit permission (Hamilton *et al.*, 2000). At the same time, problems associated with living close to the forest, particularly crop raiding, continued as before (Namara, 2000; Baker, 2004). Under the new regulations local people were not able to pursue or hunt

¹⁰ Most of the trees found outside BINP are *Eucalyptus spp*, which are exotic to East Africa

¹¹ This situation is very different from the other Ugandan gorilla park, MGNP. There, a large human community was resident within the new park, and these people were evicted, causing considerable hardship and great difficulties in park/community relations (Adams & Infield, 2000; Adams, 2004).

problem animals as they had done, and crop raiding by baboons, birds, rodents and sometimes gorillas continued to go uncompensated. In short, the declaration of BINP denied local people many of the benefits of living close to the forest, but forced them to continue to live with the costs (Baker, 2004).

The establishment of BINP led to a great deal of anger directed at the park and Uganda National Parks¹² in general (Hamilton *et al.*, 1990; Hamilton *et al.*, 2000). In the first dry season after BINP was gazetted, sixteen fires burned inside the park, destroying 5% of the forest (Hamilton *et al.*, 2000). At least some of these are believed to have been set deliberately. Local people were reported to be threatening to attack the gorillas and worrying that they would die without access to traditional medicines collected in the forest (Wild *et al.*, 1995; Namara, 2000). Even today, individuals employed by UWA at that time recall that it was dangerous for them to go into some villages alone as they risked being physically attacked by angry people.

The way in which BINP was gazetted is a classic example of the ‘fortress conservation’ paradigm in action (Adams & Hulme, 2001; Chapter 1). The approach taken to the conservation of the forest was to exclude local people, working on the assumption that they were the problem and getting them out was the solution. However, the subsequent attacks on the park and hostile attitudes of the park-adjacent community forced Uganda National Parks into a substantial policy rethink. It was decided that it would be better to involve the park-adjacent community more in the running of the park, and to create opportunities for local people to derive benefits from it, in the hope that by so doing people would tolerate the park and support its protection. To achieve this goal, a variety of Integrated Conservation and Development (ICD) strategies were developed, and Bwindi became one of the foremost testing grounds for this new management paradigm.

2.5.2 Integrated Conservation and Development at BINP

The first ICD activities at Bwindi were carried out in the late 1980s by CARE Uganda, acting in collaboration with the Worldwide Fund for Nature (WWF) funded Impenetrable Forest Conservation Project (IFCP). With support from the United States Agency for

¹² Uganda Wildlife Authority (UWA) since 1996

International Development (USAID) they established the Development Through Conservation (DTC) programme, with the aim of building capacity in park-adjacent communities for agriculture and income generation (CARE, 2006). DTC ran from 1987 until 2002, during which time it implemented numerous interventions such as establishing eucalyptus woodlots on community land to provide an alternative source of timber and firewood to the forest, and training local people in soil management and “sustainable agriculture” (Malpas *et al.*, 2002). DTC also worked with Uganda National Parks, helping them to develop schemes to improve community relations. To this end UWA now employs community rangers, drawn from local villages, who liaise with local people and carry out conservation education programmes (UWA, 2001).

The second major ICD intervention at Bwindi was the formation of Multiple Use Zones (MUZs) within which regulated harvesting of certain resources could take place inside the park boundary. The aim of these zones was to provide local people with access to necessary resources, and to foster a conservationist attitude among local people (UNP, 1995). The scheme was initiated in 1992 with a trial period when only beekeepers were allowed to enter specific areas of the forest close to Ruhija in the East. This trial was considered successful, and as a result UNP made 20% of Bwindi into MUZs, extending no more than 2km into the forest interior from the boundary (Baker, 2004). The areas to be covered by these harvest zones were selected through a series of Participatory Rural Appraisal (PRA) exercises carried out by UNP and DTC staff (Wild & Mutebi, 1996). This process identified three pilot parishes, each of which developed a ‘Forest Society’ to manage their zone. UNP signed Memoranda of Understanding (MoUs) with these Forest Societies in 1994 (Baker, 2004). This pilot was again considered successful, and over the next two years the scheme was rolled out to other parishes, such that there are now 14 harvest zones in total.

The final important ICD intervention at BINP was the establishment of a Tourism Revenue Sharing (TRS) scheme. The scheme was established in 1995, from which time 12% of all National Park income (including gorilla-tracking permit fees which at that time were \$250 US each) was placed into a fund for use on community projects. From 1996, when UWA was established, the allocation of revenue was altered by the national government so that 20% of park entry fees alone (at that time \$20 US) were placed into the fund (Archabald &

Naughton-Treves, 2001). This was intended to increase the money going into the fund, but because under the new scheme no revenue generated from gorilla-tracking permits was shared, it actually meant a reduction from \$30 US to just \$4 US per tourist (Archabald & Naughton-Treves, 2001). Revenue from the original TRS scheme was allocated to community projects by a Park Management Advisory Committee (PMAC) for each park. These were in turn advised by Parish Park Committees (PPCs) which were set up in every park-adjacent parish. Between 1995 and 1999, \$70,000 US was shared with communities around BINP from the TRS programme. This supported projects in 19 of 21 parishes next to the park (Archabald & Naughton-Treves, 2001). However, following the establishment of UWA in 1996 there was a period of confusion when the scheme did not operate, and it has only recently restarted.

2.5.3 Institutions and ICD at BINP

ICD at Bwindi has involved a large number of local, national and international institutions. The above paragraphs have mentioned some of these, such as CARE Uganda, but there are many more, including three which have played a particularly significant role in ICD in the area. These are the Institute of Tropical Forest Conservation (ITFC), the International Gorilla Conservation Programme (IGCP) and the Mgahinga and Bwindi Impenetrable Forest Conservation Trust (MBIFCT).

ITFC, which was formerly IFCP, is a research institution located on the eastern edge of the park which has taken a lead role in biological research within BINP and contributed to socioeconomic studies in the area (MUST, 2006). ITFC has influence as an advisory body as well as a research organisation, and works closely with UWA on its work inside the park and with local people. The Institute was established with funding from WWF, and is now primarily supported by funding from the Wildlife Conservation Society (WCS; A. McNeilage, *personal communication*).

IGCP is a coalition of the African Wildlife Foundation (AWF), WWF and Fauna and Flora International (FFI), and has been acting at BINP since the park was founded. IGCP operates in all three mountain gorilla range states (Uganda, Rwanda and DRC), but plays a particularly strong role in Uganda (where the powerful Dian Fossey Gorilla Fund (DFGF) does not operate). The organisation makes use of the language of ICD, as is clear from their

website, which states that “By improving livelihoods, encouraging sustainable use of resources and tackling other local issues via a range of community initiatives, the programme aims to influence attitudes to conservation at all levels and reduce the threats facing the parks, forests and wildlife” (IGCP, 2006). To this end, IGCP has carried out considerable work with park adjacent people. Like ITFC, IGCP is involved in management and offers advice and support to other local organisations, particularly UWA .

MBIFCT is a trust fund which was established in 1996. This was one of the first conservation trusts established in the world, with the intention being that the initial investment of \$4 million US from the World Bank Global Environment Fund (GEF) would generate sufficient interest to fund conservation and development activities in perpetuity (Dutki, 2003). MBIFCT supports park management and research inside the park, and community development projects (such as infrastructure) outside the park. It has targeted specific groups of beneficiaries, and has worked particularly closely with the Batwa people in the area, for whom it has purchased blocks of land (Griffiths, 2005). Unfortunately, the trust suffered very badly during the global stock market declines in the early years of this decade, and has not been able to invest as much money in its target activities as had been hoped. Nevertheless, MBIFCT provides some funding to the other organisations mentioned above.

2.5.4 The effectiveness of ICD at BINP

In common with other projects around the world described in Chapter 1, the ICD interventions detailed above have had mixed results. The Multiple Use Zone scheme has been found to have improved livelihood opportunities for park adjacent communities and improved attitudes towards the National Park (Blomley, 2003). However, when looking at how these outcomes have affected illegal activities within the park (specifically the setting of snares), it appears that law enforcement (a more ‘fortress conservation’ activity) remains more effective as a tool for conservation (Baker, 2004). Revenue Sharing at Bwindi has also had some success, and communities living next to the park have been found to rate TRS benefits as superior to those from other ICD interventions (Archabald & Naughton-Treves, 2001). However, the scheme has suffered from some major difficulties, which Archabald & Naughton-Treves (2001) classify as “poorly defined national policies and unsteady institutions, corruption, inadequate funds, and numerous stakeholders with

differing priorities”. Essentially, the scheme has struggled to determine who the beneficiaries are supposed to be, and in what form benefits should be delivered. A further concern is that the projects supported by the TRS scheme thus far (mostly schools and clinics) may be of general benefit to the community, but do not offer any relevant compensation for the kind of livelihood costs which park-adjacent people suffer as a result of conservation activities (Emerton, 2001).

The ICD interventions described above have all been organised and structured around the explicit goal of delivering benefits to local people which in turn encourage more conservationist attitudes and behaviours towards BINP. However, there is another element to ICD at Bwindi which delivers major impacts for people and the park but receives far less regulatory attention. This is the tourism industry based in Mukono parish.

2.6 The gorilla-tracking tourism industry at BINP

2.6.1 The development of tourism facilities at BINP and Buhoma

The first site in the world to habituate gorillas for mountain gorilla tourism was the Volcanoes National Park in Rwanda, which initiated the programme in 1979. This was highly successful, and Virunga National Park in what is now the Democratic Republic of Congo followed in 1985. By 1989 Volcanoes NP was bringing in over \$1 million US per year from tourism receipts (Butynski & Kalina, 1998). After BINP and MGNP had been formally gazetted, it was seen as a priority to habituate gorillas in these parks, because of the enormous potential for revenue generation from tourism. Gorilla tourism at Bwindi was initiated in April 1993, with two groups of gorillas habituated for this purpose (McNeillage, 1996). From this time it grew steadily, and following the catastrophic genocide in Rwanda during 1994 and ongoing conflict in eastern DRC, BINP became the number one destination for mountain gorilla-tracking. By 1995 it had brought in about \$600,000 US, a sum sufficient to cover recurrent costs of running the park, as well as contributing to the operating budgets of other National Parks in Uganda (Moyini, 2000; Hatfield & Malleret-King, 2003; for a full analysis of more recent BINP revenues, see Chapter 7).

The one major blight on the success of the tourism industry at BINP occurred in March 1999 when an attack by Rwandan rebels from across the border in DRC led to the deaths of 6 western tourists, a tour guide and several local people (BBC, 1999). Property and vehicles

were also destroyed. Following this disaster the park was closed entirely for one month, and during the months which followed very few tourists came to Bwindi. However, the slump in the gorilla-tracking industry was relatively short lived, and according to BINP tourist registration records, within 2 years the number of tourists had rebounded to above the pre-1999 level. The main legacy of the attack today is the large number of Uganda People's Defence Force (UPDF) soldiers who are now posted in the area to protect tourists.

The tourism industry at BINP is centred in Mukono parish on the north-western side of the park (at the location marked Buhoma in Figure 2.1). There are now two other sites with tourism facilities at BINP, one at Nkuringo on the south side of the park which has been open since 2004 for the tracking of one gorilla group, and the other at Ruhija on the eastern side of the park which has modest facilities for bird watching groups wishing to visit the nearby Mubwindi swamp (UWA, 2001). However, both of these sites are very new and undeveloped by comparison with Mukono, which boasts a fully fledged tourism infrastructure.

Mukono parish is divided into 13 smaller divisions, known as Cells or Local Council Ones (LC1s)¹³. These are referred to in everyday speech by local people as villages (or *ebyaro* in Rukiga). Data collection for this study did not take place in the whole of Mukono parish, but focused instead on the cells closest to the park headquarters, namely Nkwenda, Buhoma, Mukono, Nyakatare, Kanyashande and Nyakirehe (Figure 2.3; for more details of data collection see Chapter 3). The majority of tourism businesses in Mukono parish are centred around the entrance to BINP at the southern edge of Nkwenda village. Two of the tour camps are located inside the forest¹⁴, four in Nkwenda village, and one several kilometres away in Buhoma village (Figure 2.3). All of the craft shops are located in the Nkwenda trading centre, which is within a few minutes walk of the registration point for gorilla-tracking and other park activities just inside the forest.

¹³ Governance in the BINP area follows the standard Ugandan system, with five tiers of local government in place, beginning at the village level (LC1) and ending at the district level (LC5). LC2 is the parish, LC3 the sub-county, and LC4 the county.

¹⁴ Although one of them (African Pearl Safaris Buhoma Homestead) is not technically in the national park, because the land it occupies is an enclave of private land owned by the camp operator (see section 2.6.4.5).

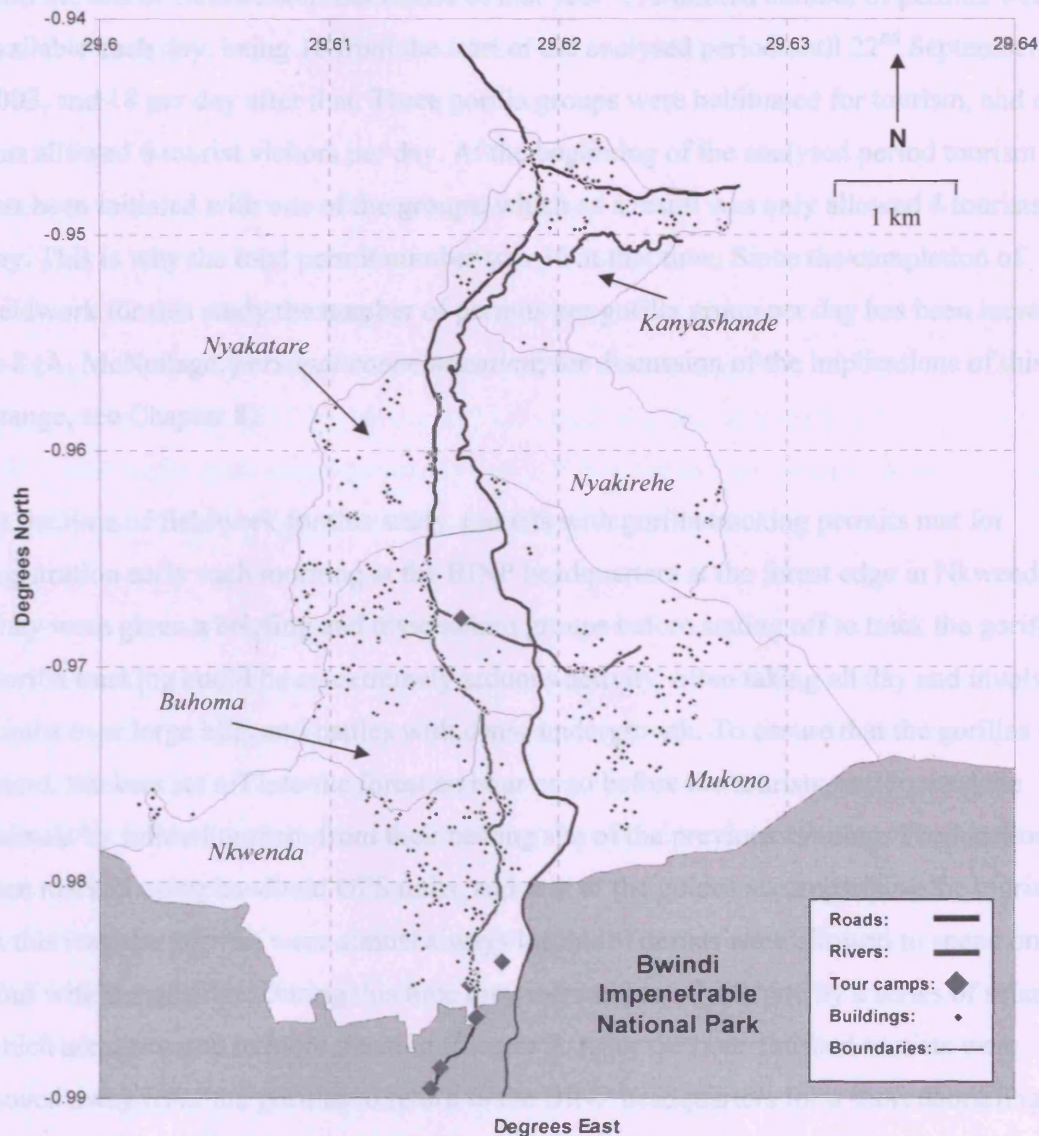


Figure 2.3: Map showing the location of the study villages, part of BINP, the seven tour camps and all other occupied buildings in the study area.

2.6.2 Gorilla tracking

The main activity which attracts tourists to BINP is the opportunity to visit habituated groups of mountain gorillas. This activity is strictly limited to individuals with valid permits. These cost \$275 US from mid 2003 (the earliest date that UWA records were analysed for this research) up to the end of July 2004, and \$360 US from 1st August 2004

until the end of fieldwork in December of that year¹⁵. A limited number of permits were available each day, being 16 from the start of the analysed period until 22nd September 2003, and 18 per day after that. Three gorilla groups were habituated for tourism, and each was allowed 6 tourist visitors per day. At the beginning of the analysed period tourism had just been initiated with one of the groups, which as a result was only allowed 4 tourists per day. This is why the total permit number was 16 at that time. Since the completion of fieldwork for this study the number of permits per gorilla group per day has been increased to 8 (A. McNeilage, *personal communication*; for discussion of the implications of this change, see Chapter 8).

At the time of fieldwork for this study, tourists with gorilla tracking permits met for registration early each morning at the BINP headquarters at the forest edge in Nkwenda. They were given a briefing and divided into groups before setting off to track the gorillas. Gorilla tracking could be an extremely arduous activity, often taking all day and involving climbs over large hills and battles with dense undergrowth. To ensure that the gorillas were found, trackers set off into the forest an hour or so before the tourists, and located the animals by following them from their nesting site of the previous evening. The location was then marked using handheld GPS units, and sent to the guides accompanying the tourists. In this way the gorillas were almost always located. Tourists were allowed to spend one hour with the gorillas. During this time they were expected to abide by a series of rules, which are discussed in more detail in Chapter 7. After the hour finished tourists were moved away from the gorillas to return to the BINP headquarters for a short debriefing and to be given a certificate, before returning to their camps.

As well as the tourists, each gorilla tracking group was accompanied by one UWA guide, two UWA trackers, at least three UPDF soldiers acting as security and some porters, if tourists had chosen to employ them. Porters and soldiers had to wait 200 m from the gorillas during the tourist visit to avoid over-crowding. The option of taking one or two porters to help carry their equipment and food was offered to tourists at the morning

¹⁵ At the time of writing, in June 2006, the price of gorilla permits is \$375 US. There are rumours of plans to increase the price to \$500 US in the near future.

briefing session. This service cost 10,000 USh (about \$5 US¹⁶) per day plus a tip. The porters belonged to a group which is discussed in more detail in section 2.6.6.1. below.

2.6.3 Other activities

At the time of fieldwork for this study, tourists had several non-gorilla-related activities available to them at BINP. To begin with, they could go on a variety of forest walks within the National Park which did not involve viewing gorillas. These were guided nature walks focusing on butterflies, primates, birds and other interesting aspects of forest ecology. These walks cost 20,000 USh (about \$10 US) each plus the daily park entry fee of \$20 US¹⁷. The walks were accompanied by one UWA guide and any additional private guide the tourist(s) wished to bring with them, such as a tour leader.

Formal tourist activities outside the park in Buhoma were limited to a ‘community walk’ into the village. This guided walk took tourists around a series of stations in the village where they had the opportunity to observe ‘traditional’ activities and learn about local culture. The stations on the walk included a demonstration of banana beer brewing, a visit to a traditional healer, a demonstration of beekeeping and a performance of traditional songs and dance by local members of the Batwa tribe. The community walk was initiated in December 2002, when it cost 10,000 USh (about \$5 US) per person. This was revised to 15,000 (about \$7.50 US) on July 1st 2004. Tourists also had the chance to buy crafts and other items along the way (such as a bottle of local beer) and could give tips to the guides or site owners.

The Community Walk was setup by MBIFCT, working in collaboration with consultants from the UN Food and Agricultural Organisation (FAO). Its aims are well summarised in the following statement from the information sheet made available to visitors going on the walk:

“The Buhoma Village Tourist Walk was designed by MBIFCT and the community members of Buhoma, in collaboration with Uganda Wildlife Authority, to increase the variety of tourism activities offered at BINP and to provide members of the local

¹⁶ The way in which local currency (Uganda Shilling; USh) values are converted into \$US in this thesis is explained in Chapter 3, Section 3.2.2

¹⁷ The entry fee is waived if the walk is done in the afternoon of gorilla tracking, as one day’s park entry fee is included in the gorilla permit price.

community with an alternative source of income directly linked to conservation. The village walk is a concrete example of a community based tourism enterprise where local people have participated in the design of its activities, invested resources in its development and benefit from its returns. At the same time, local people have an incentive to conserve the natural and cultural resources on which income depends.”

The joint aims of providing support for the local community and for conservation clearly mirror the ICD aims of other interventions in the area such as the MUZ and TRS schemes discussed in Section 2.5.2. In this case, revenue was distributed through a sharing scheme which operated to a fixed formula (Table 2.1). Buhoma Community Rest Camp (BCRC) hosted the project and was the start and end point for the walks, and was therefore included as a beneficiary. The rest of the money was spent on logistical expenses (the co-ordinator and stationery), guides, and the owners of the various walk sites. In some cases these were private individuals, and in others they were organisations (such as the Women’s group and a local school)¹⁸. The Batwa were given a larger cut than other sites because there were many more Batwa performers (normally around 20) among whom to share the income, and because MBIFCT wished to specifically target the Batwa as beneficiaries¹⁹.

Table 2.1: The % of revenues received by beneficiaries from the Community Walk

Beneficiary	% of revenue
Buhoma Community Rest Camp	20
Co-ordinator	5
Stationery expenses	5
Guides	30
Walk sites	28
Batwa	12

2.6.4 Tour camps

There were seven tour camps targeted at gorilla-tracking tourists located in the study area during fieldwork, as well as several local hostels which catered to Ugandan visitors such as tour drivers. The tour camps were marketed to very different clientele, ranging from luxurious lodges for wealthy visitors (Gorilla Forest Camp and Volcanoes Camp) through mid-range camps (Mantana Camp, African Pearl Safaris Buhoma Homestead and Lake Kitandara Camp) to cheap and basic ‘backpacker’ style accommodation (Bwindi View

¹⁸ More details of BCRC and the Women’s group are given below in sections 2.6.4.7 and 2.6.6.2 respectively.

¹⁹ Batwa received their percentage of revenue from the walk, but no Mutwa individual was employed as a guide or co-ordinator

Canteen and Buhoma Community Rest Camp). Relevant details of each camp are given below.

2.6.4.1 Gorilla Forest Camp

Gorilla Forest Camp (known locally as GFC) is located inside the National Park, and paid a concession fee to UWA equal to 10% of revenue at the time of fieldwork for this study. It was the most luxurious and expensive camp in Buhoma at that time. The camp was owned by Sanctuary Lodges, a non-Ugandan business which runs a series of luxury lodges throughout eastern and southern Africa. GFC was severely damaged in 1999 during the attack by rebels mentioned above, after which it had to be completely reconstructed. This was taken as an opportunity to upgrade facilities, and the new camp opened for business in 2001. During fieldwork GFC comprised 8 luxury tented rooms, each of which could hold two people, giving it a capacity of 16 tourists per night. It also had a bar, a restaurant area and a gift shop. Food and drink served to visitors was western in style. Prices were \$250 US per person per night for two sharing or \$324 US per night for a single occupancy room (all inclusive).

2.6.4.2 Volcanoes camp

The Volcanoes camp is located just outside BINP on the valley side overlooking the forest. It is owned by a dual nationality British / Ugandan businessman as part of a chain of lodges in Uganda and Rwanda, all of which specialise in gorilla-tracking tourism. The Volcanoes company offers tours as well as accommodation, meaning that most of their visitors stay in their lodges throughout their all-inclusive trip. The lodge comprised mid-range furnished tents at the beginning of fieldwork for this study, but was substantially upgraded to luxury cottages in the middle of 2004. Prices before the upgrade were \$72 US per person B & B based on two sharing and \$96 US for a single occupancy. After the upgrade these were increased to \$180 US per person all inclusive for two sharing and \$240 US for a single occupancy. The camp served western style food and drink.

2.6.4.3 Mantana camp

Mantana camp is located in Buhoma village a few kilometres from the park gate. It is a semi-luxurious camp which offered accommodation in 8 furnished double tents at the time of fieldwork. Mantana was owned by a Kenyan business as one of a chain of camps across

East Africa. The camp was founded on its present site in 1995, but there were rumours during the fieldwork period of a plan to move the camp closer to the park and the other tour camps in the area. Mantana offered a western style menu and had a small craft shop which sold both local and non-local products. Prices were \$110 US per person full board based on two sharing, or \$137 US for a single occupancy room.

2.6.4.4 African Pearl Safaris Buhoma Homestead

The African Pearl Safaris Buhoma Homestead (known locally as APS) is located inside the forest, but is technically not inside the National Park because it is on land privately owned by the company following a deal struck with UNP at the time the park was gazetted. APS is a Ugandan company which is also a tour operator carrying tourists to sites throughout the country. During fieldwork for this study, the camp offered self contained double and single rooms or communal rooms with shared bathroom facilities. The former were priced at \$85 US per person for two sharing or \$100 US for single occupancy, and the latter at \$60 US and \$70 US respectively. The camp was founded in 1992, served western food and had a small craft shop.

2.6.4.5 Lake Kitandara Camp

This camp is located in the middle of the trading centre in Nkwenda village. It is owned by a Ugandan tour operator which carries tourists to parks all over the country. At the time of fieldwork for this study, Lake Kitandara was a mid-range camp, offering a combination of 9 furnished tents at \$75 US per person full board or camping at 5000 USh (about \$2.50 US) per person. The camp had a restaurant / bar serving a combination of western and local food, and a small craft shop selling local and imported items. Lake Kitandara catered mainly to quite large tour groups and ‘overland’ trucks²⁰, but could also host smaller groups.

2.6.4.6 Bwindi View Bandas & Gorilla Nest Rest Camp

This camp, (known locally as BVC), is located just outside the park gate. At the time of fieldwork it was the cheapest of all the camps in the study area, offering camping space at 5,000 USh (about \$2.50 US) per night or dormitory accommodation at 10,000 USh (about

²⁰ Overland trucks are converted heavy goods vehicles which carry tourists on the top and all their luggage and camping equipment below. Overlanding tourists commonly make very long trips which can last several months using these vehicles

\$5 US) per night. BVC was originally just a restaurant, and it retained a good restaurant and bar. Facilities on offer at this camp were much more basic than those listed above. There were bucket showers on request, 'long-drop' pit latrine toilets and no electricity. The food served was a combination of western and local dishes, and a handful of local crafts were available for sale. The camp was owned by a local man (employed by UWA in Kabale town 4 hours drive away), and it was run by his wife.

2.6.4.7 Buhoma Community Rest Camp

Buhoma Community Rest Camp (BCRC, known locally as 'the campground') was a popular budget camp situated just outside BINP across the road from BVC. At the time of fieldwork it had 6 bandas with a total of 22 rooms, as well as space for 12 tents. Prices based on two sharing a banda were 18,000 USh (about \$9 US) per person or 5,000 USh (about \$2.50 US) for camping. The camp had a small restaurant which served a combination of western and local dishes, and a shop with local crafts and various snacks for sale. There were sit-down long drop toilets on the site and hot showers were available on request.

During fieldwork for this study the other camps mentioned above were privately owned businesses. BCRC was very different. It was a community owned and run organisation which existed to provide employment for local people and to generate revenue to support community projects. The camp was jointly owned by every adult (over 18 years old) in the entire parish, including the Batwa, totalling over 6000 people at the time of fieldwork. Together they elected a council every two years which was responsible for the day to day running of the camp, and for appointing all staff. All employees had to come from Mukono parish, and they were only given three year contracts after which they had to be re-interviewed to give other people the chance to compete for a job. BCRC was established with help from a longstanding Peace Corps Volunteer (PCV) in the area, and with funding from Peace Corps and the United States Ambassador's Fund, which contributed \$9,000 US (Hoke, 2000). Since this time BCRC has received substantial financial and technical assistance from both ITFC, which owns the land upon which it is built but does not charge any rent, and IGCP, which gives technical advice on the operation of the business. Both of these organisations are involved at committee level in overseeing the development of BCRC and offering assistance where it is required.

Like the Community Walk, BCRC can be considered an ICD intervention in tourism at BINP. It aimed to deliver development benefits to local people, and knock-on conservation benefits for the National Park. Benefits for local people were delivered in two ways. Firstly, the camp only employed local people and aimed to rotate jobs regularly to spread the proceeds around. Secondly, 20% of all revenues from the camp were placed into a fund for distribution to community projects within Mukono parish. By the time of fieldwork for this study the fund had been used to support local schools, churches and a hospital, as well as for purchasing tools required by the Women's group (see below) for an income generating project (see Chapter 4 for details). Since then, money from BCRC has been used to provide matching funding for a gravity water project which has brought clean, piped water to most of the villages surveyed for this study.

2.6.5 Other tourism businesses

During fieldwork the trading centre of Nkwenda village just outside BINP was home to a variety of businesses which targeted tourists. Most of these were handicraft shops which sold a range of locally made or imported items, amongst which gorilla carvings were the most common. All of the shops were roughly built wooden shacks with painted signs outside to attract customers. There were 4 privately owned shops at the beginning of fieldwork, but by the end of 2004 this had increased to 7. Two of the shops were outlets for the products of local membership groups, specifically the Orphans' group and the Women's group, which are discussed in more detail below. Away from the shops in Nkwenda, crafts were also sold at various stations along the Community Walk and by children who came out to intercept tourists on their way to and from the forest.

The last main tourist related business with premises was a 'supermarket' which was located in Nkwenda centre and which opened during fieldwork in 2004. This shop sold a variety of basic goods which were imported into the area from Kabale or Kampala, including western-style crisps, chocolate bars, bottles of wine, washing products and biscuits. Several other businesses in the area catered to tourists occasionally but primarily focused on the custom of local people. These included a number of small 'hotels' which served cheap meals and drinks, the 'boda-boda' motorcycle taxis which operated in the area and were occasionally used by more intrepid visitors to get to the park, and pickup trucks which carried some

tourists from the termination point of the bus service from Kampala up to Buhoma (a journey of 17 km).

2.6.6 Membership organisations linked to tourism

At the time of fieldwork there were several membership organisations in Mukono parish which aimed to facilitate the sale of goods or services to tourists from their members. These were the Porters' group, the Bwindi Progressive Women's Group (BPWG), the Orphans' group and some small producers' groups such as a Beekeepers' Group and a Mushroom Growers' Group. The former three were important players in the tourism industry within Mukono, and their role needs to be considered here in more detail²¹.

2.6.6.1 The Porters' Group

As mentioned above, tourists could take porters with them into the forest. These porters all belonged to a group, which had a complete monopoly on the provision of portering services. The group had a constitution which was agreed with UWA, with whom the group co-ordinator was in the process of developing an MoU during fieldwork. At that time there were 36 members of the group, and membership of the group was strictly limited to this number. When a vacancy arose, interested applicants were required to submit a letter of application along with a reference from their LC1 chairperson. The final decision on new appointments rested with the UWA warden of tourism, in consultation with the group chairperson. Applicants had to be local (living in Mukono parish), healthy and friendly towards tourists. The number of porters required each day was unpredictable, so after doing a days work each porter went to the back of the rota and next worked after everybody else had been into the forest. During the peak season this meant each porter going out four or five times a month. All the porters were obliged to come to the park headquarters every morning even if they were not likely to work. This was so they could register and carry out menial tasks for UWA, such as cutting the grass at the headquarters compound. They were also obliged to wear the group uniform, which cost 22,000 USh (about \$11 US) to purchase.

²¹ The details given here include the formal procedures by which members of each group were selected. These were not always strictly adhered to, and the situation in practice for each group is discussed in detail in Chapter 5.

2.6.6.2 Bwindi Progressive Women's Group

BPWG aimed to provide women from Mukono parish with income generating opportunities and the chance to support one another with group activities such as carrying out weeding. BPWG was in fact an umbrella organisation which co-ordinated seven smaller women's groups which were each specific to a certain village. This arrangement was rather complex, and came about when the original parish-wide group (founded in 1992) splintered into smaller groups as a result of being too large and unwieldy and a degree of political infighting (Hoke, 2000). At the time of fieldwork BPWG did not have members of its own, but rather dealt with all seven of the smaller groups. Each of these smaller groups had its own membership criteria, but none was size-limited so the main operational criterion was simply being a local woman. The duties of BPWG were to arrange cultural performances for tourists²², to market crafts on a national level, and to arrange trainers and trainees in various skills, such as craft making. They were essentially the point of contact with the outside world, whilst each sub-group dealt with matters internally. Each of the small groups had around 30 members, meaning that the Progressive Group encompassed around 200 women altogether.

The main income generating activity for the BPWG was the sale of crafts to tourists through a small handicraft shop in Nkwenda trading centre near the park gate. This shop sold a variety of handmade baskets and mats made by group members, and gorilla carvings which were made by 'honorary' male members of the group, because carving wood was not culturally acceptable for women in the area. Group members were paid for items they contributed after they had been sold, receiving a fixed cut of the sale price. In the past, BPWG sold crafts for export from Uganda through the Uganda Community Tourism Association (UCOTA). Unfortunately in the few years before fieldwork UCOTA declined somewhat, and there had been no recent sales of BPWG goods through the association.

2.6.6.3 Bwindi Orphans' Group

Bwindi Orphans' Group was a large organisation which aimed to provide education, skills and income generating opportunities to orphans living within Mukono parish. It carried out many activities and operated a primary school in Buhoma village which was intended to be

²² This very rarely happened by the time of fieldwork, because the Orphan's group had pretty much cornered the market in cultural performances to tourists. See 2.6.6.3

free to members of the group. The Orphans' Group had two means of generating income for itself and its members. First, it operated a craft shop in Nkwenda trading centre, which sold items from the local area and elsewhere in Uganda. Second, it laid on cultural performances for tourists. These took place at tour camps, usually when a large tour group had come in and a performance had been requested by their tour leader. The performances were free to attend but tourists were given the opportunity to buy crafts in a 'market' after the show. They were also encouraged to sponsor the education of a child by signing up to send money to the group every year. The singing and dancing of the group members was very impressive and they regularly travelled elsewhere in Uganda to compete in regional and national competitions. Membership of the orphans group was technically open to any 'single orphan' (with one surviving parent) or 'double orphan' (with no surviving parents) from Mukono parish. The group co-ordinator had the final decision over membership.

2.7 Summary

This chapter has introduced in detail the key aspects of the study site at which research for this thesis was carried out, focusing on the history of the park and its neighbouring people, conflict between them, interventions designed to solve conflict, and the current structure of the tourism industry at BINP. These characteristics of the study area make it an ideal site to investigate the impacts of tourism for several reasons. First, gorilla-tracking tourism is often considered a type example of ecotourism, making it an obvious candidate for investigation. Second, the study area represented a closed-system for analysis, because all tourists had to stay there overnight before tracking. Third, the tourist population was relatively small at any one time due to the limited number of permits, making research into tourism impacts manageable. Finally, the area offered facilities for a wide range of tourist types, making it possible to investigate how tourists differed in their impacts.

Making use of the information given in this chapter, each data chapter in this thesis (Chapters 4 to 8) presents specific research aims relevant to the local context at BINP. First though, it is necessary to introduce the general research methods and approach used to address these research aims. This is the subject of the following chapter.

Chapter 3: General methods

3.1 Chapter summary

This chapter gives an overview of the general research methods used to collect data for this thesis. The emphasis here is on methods which provide data used throughout the following chapters. Where methods are specific to just one chapter, they are detailed there. This chapter begins by outlining some general issues relating to data collection and fieldwork (Section 3.2). It then goes on to give details of the methods used to collect three main strands of data: socioeconomic data (Section 3.3), tourist data (Section 3.4) and data from organisations involved in tourism (Section 3.5). Finally, two of the main data analysis techniques used throughout the thesis are introduced (Section 3.6).

3.2 General issues

3.2.1 Fieldwork overview

Data were collected during two field seasons in Uganda. The first was a pilot study carried out between mid-May and late July 2003. The second was the main field season from early December 2003 to the end of December 2004. During the pilot study two weeks were spent at the final study site, during which time the suitability of the area for this research was assessed and contacts were made. The first two months of the main field season were spent in Kampala studying Rukiga, the language spoken by the overwhelming majority of people living in the study area (see Section 3.3.1 for details). The rest of the main field season, from February to December 2004, was spent at the study site collecting data, apart from occasional visits to Kampala to complete housekeeping tasks, and a 4 week trip to the UK in June / July.

3.2.2 Money

A lot of the data collected for this research relate to money. The national currency of Uganda is the Ugandan Shilling (USh), but this is unfamiliar to most non-Ugandans, and a lot of transactions in the tourism industry take place in US dollars. During data collection, some figures were recorded in USh, and others in \$US. In the thesis, where figures are reported in shillings, they are converted to \$US for ease of comprehension where appropriate. Where precise conversions were considered necessary, they were calculated using the exchange rate published for the week in question in the New Vision newspaper of

Uganda. Where precise conversions were not considered necessary, approximate \$US values are given, using the 'rule of thumb' exchange rate of \$1US = 2000 USh which was appropriate at the time of fieldwork.

3.2.3 Inter-disciplinary research

This thesis is about the impacts of tourism; on people, on the environment, and on the relationship between them. As such it necessarily adopts an inter-disciplinary approach, incorporating research methods drawn from the biological and social sciences. Some of these methods are quantitative, and others are qualitative. Qualitative tools are used initially to identify specific impacts of tourism to investigate at the study area. Quantitative tools are then used to investigate these impacts at the broad-scale, through the analysis of large-sample survey data. Finally, qualitative tools are used to explore these findings in more detail. This serves a dual purpose – first cross-checking the accuracy of quantitative findings, and second giving additional context and meaning beyond that which can be achieved with statistics. The diverse research methods used returned data related to the local community, data relating to tourists, and data relating to organisations associated with tourism. These are explained in more detail in the following three sections.

3.3 Socioeconomic data

3.3.1 Location, language and research assistance

In carrying out socioeconomic (SE) research, it is important to consider how you are perceived by local people (defined here as all those normally resident in the study area), and how your actions might influence the quality of data which you are able to collect (Bernard, 2002). Of particular significance are how you choose to engage in host society, the language you use, and whether you choose to recruit any assistants. These issues are considered in the following paragraphs.

Whilst collecting SE data for this thesis, I tried to participate as far as possible in local life, in order to make people aware of who I was, to collect observational data (see Section 3.3.4), and in an effort to gain the trust and friendship of local people. To this end I attended many public events (including church services), went to the weekly markets, and spent evenings socialising in the village trading centres. To get around the study area I either walked or rode a pedal-cycle, making it possible to talk to people along the way. I

also chose to rent a house made in the typical local style in the middle of the study site (Mukono village), about 2 km away from the main tourist infrastructure. This house was selected because it was conveniently located for carrying out research in the study villages, and because it helped make it clear that I was not a tourist myself, something I considered important because most local people naturally assumed that any white person they saw must be a tourist. In addition, I made every effort to be seen as an independent researcher with no affiliation to another organisation. I had permission from UWA for my research, and access to the site was granted in collaboration with ITFC (which is introduced in Chapter 2), but I did not work directly with them, drive one of their vehicles, or do anything else which might make me appear to be working for them. This approach was intended to avoid existing local opinions (either good or bad) about these organisations being applied to me, which could have affected responses given to me in my research.

The official language of Uganda is English, but in the study area it is only spoken by well educated people, and the overwhelmingly dominant local language was Rukiga. I invested considerable effort in learning Rukiga, and by the end of fieldwork I could hold conversations and conduct simple interviews. This undoubtedly improved my standing in the eyes of the Bakiga and enhanced the quality of much of the data collected. Rukiga was the language used for all interviews, unless the respondent spoke excellent English. Rukiga interviews were interpreted by a Research Assistant (RA).

One RA was employed throughout the main field season, and he was extremely useful as an interviewer / translator, and as somebody with whom to discuss ideas and ask questions. He was recommended to me by staff at Buhoma Community Rest Camp, and was employed after a trial period of one week. He was born locally (in Kanyashande), but had been to school up to Senior 4 (equivalent of UK GCSEs) in Kampala. This meant that he spoke English and Rukiga fluently. As well as working for me, he was employed part time as a Community Walk guide and as a freelance bird-watching guide, meaning he had a good understanding of the tourism industry. He was in his early twenties and was well known in the study area, where he seemed to be generally well liked. The age, gender and social standing of RAs always influences the data they are able to provide (Bernard, 2002), and I made every effort to cross-check his data against other sources where possible and to bear this in mind during analysis.

SE data were collected using four main research tools. These were household surveys, semi-structured interviews, unstructured observations, and mapping techniques, each of which is described in turn below.

3.3.2 Household surveys

A large proportion of the data presented in this thesis was collected during household surveys. Before explaining these surveys in more detail, it is first necessary to consider what is meant by the term ‘household’. A common approach is to define a household as “all individuals consuming food prepared at the same cooking fire” (Sullivan, 2005). However, this can be confusing when individuals regularly change location from day to day, as would a polygamous male with several wives who eat separately. An alternative approach is to adopt a local definition, as this is likely to be immediately understood by respondents and research assistants (Hampshire & Randall, 2005). In this study the latter approach was taken, with the operational definition of ‘household’ borrowing heavily from that used by the LC2 chairman to draw up the list of all local households for taxation. Under this definition, a household is considered to comprise all the people who usually spend the night in the same house or compound (group of buildings sharing a kitchen). This includes resident family members, economic migrants to the area and in some cases house staff, and typically excludes children away at school, unless they are on a protracted break from their studies and working at home. Where men are polygamous and divide their time between houses in separate compounds, they are considered members of both households. Two household surveys were carried out as part of this study. First, a baseline survey of every household in the study area, and second an in-depth survey which targeted selected households in three of the study villages. An overview of the timing, location and sample size of these two surveys is given in Table 3.1, and they are described in detail in turn below.

Table 3.1: Basic details of the baseline and in-depth household surveys

	Baseline survey	In-depth survey
Survey period	11/3/2004 to 18/7/2004	28/9/2004 to 4/12/2004
Villages surveyed	Nkwenda, Mukono, Buhoma, Nyakatare, Nyakirehe & Kanyashande	Nkwenda, Mukono & Kanyashande
Total no. of households surveyed	589	138 (23.4%)

3.3.2.1 *The baseline household survey*

The baseline household survey (BHS) was carried out between the 11th of March 2004 and the 18th of July 2004. It covered every household in the six study villages, namely Nkwenda, Mukono, Buhoma, Nyakatare, Nyakirehe and Kanyashande (see Chapter 2 for the location of each village), and therefore approximated to a census of the study population. The aim of the BHS was to give a complete picture of community composition, demographics, and the level of engagement in tourism; data which could then be used to perform broad-scale analyses, and to select households and individuals for further study (as described below). Data for the BHS were collected during face-to-face interviews with an adult (over 18) member of each household, and recorded on a standard data form (see Appendix A). Many of the BHS data collected appeared to be uncontroversial at the time, so it was not considered important to specify which adult answered the questions (although this was recorded). With hindsight this assumption seemed less justified, and it was decided to treat certain BHS data (particularly relating to livestock numbers) with caution during analysis. Early interviews were conducted by me and the RA, who translated from Rukiga to English. Once I was happy that the questionnaire was working and the RA understood it, he completed the BHS on his own. Data were computerised at the study site, making it possible to investigate and, if necessary, correct anything which seemed unusual in the data forms.

In the BHS each household was assigned a unique ID number, and data were then collected about the assets and members of the household. The data collected regarding assets are summarised in Table 3.2.

Table 3.2: Household asset data collected in the baseline household survey

The location of household sleeping quarters

The building materials used to construct the walls, floor and roof of the sleeping quarters

The crops grown by the household

The livestock owned by the household

Location data were collected using a hand-held GPS unit and only recorded if the point resolution was accurate to 5 m or better. Building materials were selected from mud or cement for floors, banana fibres, mud or bricks for walls and banana fibres or iron sheets for roofs. For crops, respondents were asked whether they grew bananas, millet, ground

nuts, beans, sweet potatoes, cassava, eucalyptus, maize, sorghum, yams, coffee and tea. They were asked to name all of these crops they had grown in the past year, because some were seasonal and not grown at all times. For livestock, respondents were asked how many cows, goats, chickens, pigs, bees (measured as the number of hives) and fish (measured as the number of ponds) they had. These closed-category response options were chosen on the basis of a pilot questionnaire of twenty households. Where more than one household shared a polygamous male head, crops were allocated to the households separately, but livestock were allocated to both. This reflected how these assets were typically used (i.e. women cultivating crops for their own family, but livestock being controlled by men for sale). This approach over-estimates the abundance of livestock, but this problem is not considered severe as very few polygamous households were found in the survey (see Chapter 4).

The data collected on each household member in the BHS are summarised in Table 3.3.

Table 3.3: Individual characteristic data collected for each household member in the BHS

Name	Place of birth
Gender	Education
Position in the household	Whether involved in the handicraft industry
Age	Whether a member of a tourism-based group
Tribe	Whether and how involved in tourism in any way
Clan	

Position in the household was recorded as the relationship to the head (e.g. wife, son) or the role if a non-relative (e.g. employed cattle grazer). Tribe and clan were defined by the respondents²³. Place of birth was recorded as the village if it was within Mukono parish, as the parish if it was elsewhere within Kanungu district, and as the district if it was further afield. For tourism-based groups, respondents were asked if they belonged to the Porters' group, the Women's group or the Orphans' group. For education, where the individual had left school permanently, the highest year they had completed was recorded. Where they were still studying, their current year was recorded. The Ugandan school system has seven years of primary school (P1 to P7) and six years of secondary school (S1 to S6), followed

²³ The tribal group to which an individual belongs is generally considered very clear in SW Uganda, being inherited from one's father (Ngologozo, 1998). Within the Bakiga tribe clan membership is also very clear. Clan membership is inherited from the father, but women change clan when they marry (Ngologozo, 1998). See Chapter 2 for details.

by university. The main activity of each individual was defined by the respondent. Typical responses were ‘at school’, ‘employed as...’, or ‘farmer’, which covered subsistence farming activities. Each individual was also allocated a unique ID. Where an individual was a member of more than one household, they retained a single ID, meaning that population level analyses did not double-count any respondents. Before completing the interview, the ID of the individual answering the questions and the date of the interview were also recorded.

The BHS was intended to provide a complete census of the study population. However, in practice it undoubtedly missed some individuals and households. Where individuals within sampled households were missed, this was probably due to extended absences (such as attending school). There was also inevitably something of a grey area regarding when an extended absence became a permanent emigration event, and without perfect knowledge of previous household membership it was necessary to rely on respondents to give information about absent individuals. To the best of my knowledge, entire households were only missed where the individuals in question were barracked with the UPDF (Uganda People’s Defence Force) or living at the UWA headquarters. Access to these living areas was denied, making it impossible to survey these individuals. The significance of these absences for measuring immigration to the study area is considered in Chapter 4.

3.3.2.2 The in-depth household survey

The in-depth household survey (IDHS) was carried out from the 28th of September 2004 to the 4th of December 2004. It aimed to build on the BHS by providing further useful information on household composition, assets, activities and economic transactions. The IDHS covered households from three sample villages selected on the basis of their location: Nkwenda where most tourism facilities were located, Mukono half-way across the study area, and Kanyashande at the furthest point from the park gate in the study area (see Chapter 2, Figure 2.3). This distance gradient was chosen to make it possible to investigate the role of distance from the park as a determinant of engagement in tourism. Within each study village households were selected randomly for inclusion in the IDHS, but the sample was stratified according to wealth rank (see Section 3.6.1 below for details of wealth ranking). This means that as far as possible the IDHS sample in each village had the same proportion of households in each wealth rank as did the total population of households in

that village. Stratification was used to ensure that the sample included a representative spread of wealthy, poor and mid-ranking households. It was intended that 50 households would be surveyed in each village, but in practice only 138 useable forms were returned. This shortfall was due to some respondents being unavailable or away despite repeat visits, or because some elements of the form could not be completed by the available respondents.

The IDHS comprised structured questionnaire interviews carried out face-to-face with respondents in Rukiga by me and the RA working together. Answers were recorded using a standard data form (see Appendix B). In contrast to the BHS, I was present for all IDHS interviews. This was because the survey was rather more complicated and I felt there would be too much room for misinterpreting the survey forms if the RA carried out the interviews alone. The main interviews for the IDHS were always carried out with the head of household (who could be a woman). In some cases follow-up interviews were required with some household members to fill gaps in the knowledge of the head of household. The data collected by the IDHS are detailed below.

The data collected from each household in the IDHS are summarised in Table 3.4.

Table 3.4: Data collected from each household in the in-depth household survey

Material assets owned by all members	Individual income from paid employment
Land owned and rented	Individual income from any tourism activity
Crops grown	Individual attitudes to tourism and conservation
Household income from sale of crops	

For material assets, respondents were asked how many bicycles, cars, charcoal stoves, irons, lanterns, mobile phones, motorbikes, plates, radios, tea cups and watches were owned in total by all members of the household. These closed-category response options were chosen on the basis of a pilot questionnaire of twenty households. For land, respondents were asked to estimate the total area of land which they owned and which they rented. Estimates were given in acres, with respondents being informed that one acre is roughly equal to half of a football pitch if they were unsure of the size of an acre (half a football pitch ~ 0.9 acres. There were several football pitches in the study area, so most people were familiar with their size). It is acknowledged that the final measures given are unlikely to have been

highly accurate. For crops grown, respondents were asked whether they grew each of the crops surveyed by the BHS, as explained above.

Information about income from formal paid employment was collected directly from the paid individual. They were asked to give their monthly salary, the tax they paid, and details of any other benefits, such as tips, received each month. Information about income from tourism through paid employment was collected in the same way. Information on informal income from tourism was collected from each earning individual. They were asked to list all their streams of tourism income (such as craft sales), and to give the amount they had earned since the last major religious festival which was more than two months ago (either Easter or Christmas). These events were used rather than specific recall periods because they were well known by everybody (all respondents were Christian) and unlikely to cause confusion. Income was then scaled up to an annual figure on the assumption of a constant income over time²⁴. To calculate annual income from crop sales, respondents were asked about returns since the last major religious festival, for the reasons given above. For crops which grew at a fairly constant rate all year round, such as bananas, the income recalled was converted to annual income on the assumption of a constant rate of sale. For single harvest seasonal crops (such as millet) where the harvest season was covered by the recall period, the figure given was taken as the figure for the whole year. Where there were two harvests (such as sweet potatoes) and only one was covered, the value given was doubled. In any case where the recall period did not include the harvest period, a sale value of 0 was recorded. Collecting accurate income data is notoriously difficult for various reasons, including the extreme seasonality and unpredictability of many income generating opportunities for the rural poor, and the possible reluctance of respondents to give accurate answers to questions about their income. Whilst every effort was made to reduce these problems in this research, it is accepted that as a result of these problems, and the assumptions applied, the income data collected are unlikely to be highly accurate, and should be considered with a degree of caution.

²⁴ This ignores seasonality in the tourism industry, which means that the final figures cannot be considered precise. The tourism industry was not strongly seasonal in terms of the number of visitors, but the composition of the tourism population did differ over time, which may have affected rates of income through the year (Chapter 8).

Finally, the IDHS included questions about the attitude of the respondent to various costs and benefits of the tourism industry and the National Park. These were open-ended questions which are explained in more detail in Chapter 6. All of the data described in this section were computerised during fieldwork, and inconsistencies with the results of the BHS were identified and corrected where necessary.

3.3.3 Semi-structured-interviews

Semi-Structured-Interviews (SSIs) were used to collect data from targeted individuals with in-depth knowledge of a specific topic. These interviews were carried out in Rukiga or English, depending on the language ability of the respondent. When Rukiga was used the RA acted as translator. Prior to the interviews I made a list of issues I would like to discuss, and then made extensive hand-written notes during the meeting. Afterwards these notes were written up with the help of the RA, to ensure that as much information as possible was recorded. Details of the individuals interviewed in this way are given in the relevant chapters.

3.3.4 Unstructured data collection

Throughout the main fieldwork season I tried whenever possible to gain further insights into the impacts of the tourism industry for local people through unstructured observations and conversations. In some cases this involved simply observing an event unfolding before me, and in others I gained information by asking informal questions of friends and contacts. Every evening I wrote up notes on interesting information I had picked up during the day, and these notes were used to contextualise and cross-check much of the data collected using more formal techniques throughout the thesis. This approach gave some interesting insights into local perspectives on tourism which would not have been identifiable from a quantitative survey. For example, this method allowed me to notice that when talking to outsiders, local people almost always made an effort to present the impacts of tourism in a positive light. However, within the local population, it was clear that considerable conflicts around various aspects of tourism existed, and these sometimes flared up into major disputes. In other words, two narratives were in operation; one for outsiders, and another for locals. Subtle local dynamics like this are important, and can only be uncovered through in-depth, qualitative research.

3.3.5 Mapping the study area

Maps of the study area were made using data collected with a hand-held GPS unit. Point co-ordinates were collected for all buildings in the study villages during the BHS (as described above), and every thirty metres along the boundaries of all the villages. These were then used to make a map of the study area (Figure 2.3), and to calculate the distance of each household from the park headquarters using ARCVIEW GIS software (Chapter 5).

3.4 Tourist data

Tourist data were collected from interviews with gorilla-tracking tourists. Other tourists who did not track the gorillas were not surveyed, because the focus of the research was on gorilla-tracking in particular. The overwhelming majority of visitors to BINP went gorilla tracking, so it is unlikely that non-tracking tourists had any substantial impact in the area. The tourist survey was carried out in three blocks. The first ran from the 9th of February to the 2nd of March 2004, the second from the 25th July to the 25th September 2004 and the third from the 25th November to the 8th December 2004. These survey times were selected to correspond with a low season, high season and mid season for tourism respectively (see Chapter 8). During each survey period, all tourists going to the gorillas were met by me at their morning registration (see Chapter 2) and introduced to the research project. The camp they were staying in was noted and they were asked if they would be willing to participate in a questionnaire interview later in the day. After tourists had returned from gorilla-tracking I moved from camp to camp looking for tourists available to be interviewed. Rather than adopting a randomised sampling technique, any tourists who were found in public areas of their tour camps and willing to be interviewed were surveyed. This approach was taken to maximise the sample size returned, and to avoid ever having to pursue individual tourists by asking for them to be called from their rooms, which I felt would be intrusive. No tourist who was not busy ever refused to be interviewed. Because the sampling strategy used was not truly random, it was possible that the sample population may have been unrepresentative. This possibility is explored statistically in Appendix C, which shows that although in some cases the sample and overall population differed, these were unlikely to have introduced important biases into the data.

The tourist interviews collected data on the respondent's individual characteristics (such as their age and nationality), the details of the holiday they were on, details of their visit to the

gorillas, some aspects of their medical history, details of money they had spent in the study area, the activities they had done in the study area and some of the factors which motivated them to visit BINP (see Appendix D for the full survey data form). Further information on the specific data collected from tourists is given in the relevant data chapters. In order to capture as fully as possible data regarding tourists' spending patterns and uptake of activities in the study area, questions relating to these issues were only asked if the interview took place on the day the tourist was leaving or the evening before their departure. Where this was not the case, these questions were omitted from the initial interview and a follow-up interview which met the time criteria was arranged to complete the survey.

3.5 Data regarding organisations involved in tourism

3.5.1 Tour camp survey

Interviews were carried out with the managers of each of the tour camps to establish various details of their camp (Table 3.5).

Table 3.5: Details of each tour camp collected from interviews with camp managers

Name	Camp history
Number of beds	Occupancy over time
Number of staff	Facilities and food offered
Staff salaries	Camp ownership
Location of ,and spending on, procurement	

Camp history included when the camp was established, and how it had changed in terms of size, facilities and prices over time. Occupancy data were collected where possible for cross-checking against UWA records (see below), but it was found that the tour camps generally kept very poor records of their business, making it difficult to get accurate records. Managers were also asked who owned the camp, and to give details of where the camp procured various items. This information was required for calculating leakage from the camps, and is described in more detail in Chapter 4.

3.5.3 Survey of other tourism businesses

A complete survey of other businesses in the study area which sold goods or services directly to tourists was carried out. In each case data were collected on the type of business, who owned the business, the number of employees, and how much they were paid. Again,

these data were used in the calculation of leakage, as described in more detail in the following chapter.

3.5.2 UWA tourist registration records

Finally, data were collected from the UWA gorilla-tracking tourist records. These were completed every day by the park Information Clerk, who recorded various details of visitors in registration books. UWA kindly gave me full access to these records, and I was able to record the age, gender, nationality, date of tracking and gorilla group tracked for every tourist from 24th June 2003 to 24th November 2004. On my suggestion, from the 8th February 2004, UWA began recording the camp each tourist was staying in, and from the 11th May 2004 they began recording tourists' residency status (Ugandan Citizen, East African Resident or Foreign Resident). I collected these data from the registration books from the dates they became available.

3.6 Data analysis

This thesis makes use of a wide range of analytical tools, and in most cases these are described where appropriate in the data chapters. However, two techniques are applied in several data chapters, and these are introduced here to avoid unnecessary repetition. They are Participatory Wealth Ranking (PWR) and Mixed Effects Modelling (MEM).

3.6.1 Participatory Wealth Ranking

Participatory Wealth Ranking is a technique designed to return a measure of household wealth which is locally relevant, and takes into account cultural and social dimensions of wealth which may not be obvious to a researcher. As part of a more general toolkit of 'participatory' approaches to development research developed in the 1990s, PWR aims to give respondents more agency over the research process, improve the quality of data returned, and make research less extractive (Chambers, 1992). In practice these techniques have been widely criticised, mostly on the grounds that they tend to be applied very quickly, which "inevitably limits the possibilities for developing in depth background knowledge, and for the cross checking and validation that longer-term research should allow" (Homewood, 2005a). It is also obviously the case that the members of the ranking team and their group dynamic will influence the way in which households are ranked, and that this can reflect village politics, individual conflicts and numerous other complex issues which

cannot easily be identified (Campbell, 2002). Whilst recognising these caveats, it was felt that using PWR in this research was justified, because it formed just part of a much broader and in depth research programme, making it possible to avoid over-interpreting the results. In addition, data from the PWR exercises were only used to stratify the IDHS samples, and for one section of statistical analysis.

PWR was carried out in the three villages surveyed by the IDHS (Nkwenda, Mukono and Kanyashande). For each exercise a selection of local councillors (LC1s) for the village in question were invited to participate. The LC1 cell was chosen as the unit of analysis because they were defined areas, and because each had around 100-120 households, making it possible for the participants to be familiar with all of them. The councillors for each village were invited to attend their ranking exercise by the parish (LC2) chief, who had the authority to instruct them to attend. To achieve balanced responses, an equal number of men and women were invited to participate. In practice this usually meant asking some of the men present to leave, as there were more men than women on each LC1 council. The meetings were held in Rukiga and chaired by me, with the RA or the parish chief translating where necessary.

During the ranking exercise, the councillors were first asked to discuss what wealth meant to them and the kind of factors which might contribute to the wealth of a household (such as the number of cows owned or the quality of their house). This was a free ranging discussion. They were then asked to come up with a number of wealth ranks which they felt reflected the divisions of wealth within the community. For each rank, they were asked to give a series of measures which would define membership of that rank, such as a number of acres of land, or a number of children in school. Having chosen the number of ranks they wanted and the criteria for membership of each rank, the councillors were asked to place every household in the village into one of the ranks. To do this, a numbered card representing each household was held up and then placed into a pile on top of a sheet of paper representing a given rank. Each household was debated in turn, giving the councillors the chance to discuss it and think about which rank it should fall into. Councillors were free to reconsider their decisions and go back to previous households to change their ranking. By this process all households in each village were ranked, apart from those which

councillors did not feel able to make a judgment upon, usually because the members of a household had recently migrated into the area.

3.6.2 Mixed Effects Modelling

Several chapters in this thesis make use of multivariate statistical modelling to investigate relationships between single response variables and multiple explanatory variables. In many of the models which are developed, the unit of replication is the individual – either individual tourists or individual household members. Frequently, data were collected from more than one tourist within the same gorilla tracking group, or from more than one member of a single household. These individuals were effectively nested within their groups, and when analysing these data there was therefore a risk of pseudo-replication – treating units of replication as independent when in fact they were not. Standard statistical modelling with such data is inappropriate, because data from each group will be correlated, thereby violating the assumption of the independence of errors (Crawley, 2002). Mixed Effects Models (MEM) deal with the non-independence of errors by modelling the covariance structure introduced by the grouping of the data. In these models, the effect structure in the data is made explicit, with each explanatory variable being classified as a random effect or a fixed effect. Fixed effects influence only the mean of the response variable, and are usually the variables of interest in attempting to explain the response variable. Random effects influence only the variance of the response variable, and are usually the grouping variables responsible for potential pseudo-replication.

Mixed effects modelling is used in Chapters 5, 7 and 8 of this thesis. In each case a slightly different approach is adopted, depending on the nature of the response variable and the statistical software used for analysis. These specific details are given in the methods section of each relevant chapter.

3.7 Summary

This chapter has introduced some of the diverse and inter-disciplinary methods which were used to collect data for this research. Data were collected using both qualitative and quantitative techniques, and regarding the local community, tourists, and the National Park. The aim here has been to give a general introduction to each research tool applied. Further details are given where appropriate in the data chapters which follow.

Chapter 4: Tourism at the community level: revenue, leakage and socioeconomic change

4.1 Chapter summary

According to Link 1 of the theoretical framework of Ross & Wall (1999; Figure 4.1), ecotourism is supposed to deliver benefits to the host community at the destination. This chapter, and the two which follow it, investigate the relationship between tourism and the local community in the study area, establishing the extent to which the theory matched the reality. This Chapter focuses on the broad-scale impacts of tourism for the entire study population, first by taking mean values of various socioeconomic indicators across all study households to assess general impacts, and second by comparing the value of tourism revenue and other sources of revenue to the local economy. Chapter 5 takes the analysis to a finer scale, disaggregating impacts of tourism by considering how benefits were distributed between individuals and households in the study site, and considering factors constraining access to benefits. Finally, Chapter 6 considers the costs of tourism and conservation for local people, and the extent to which tourism benefits compensated for these costs.

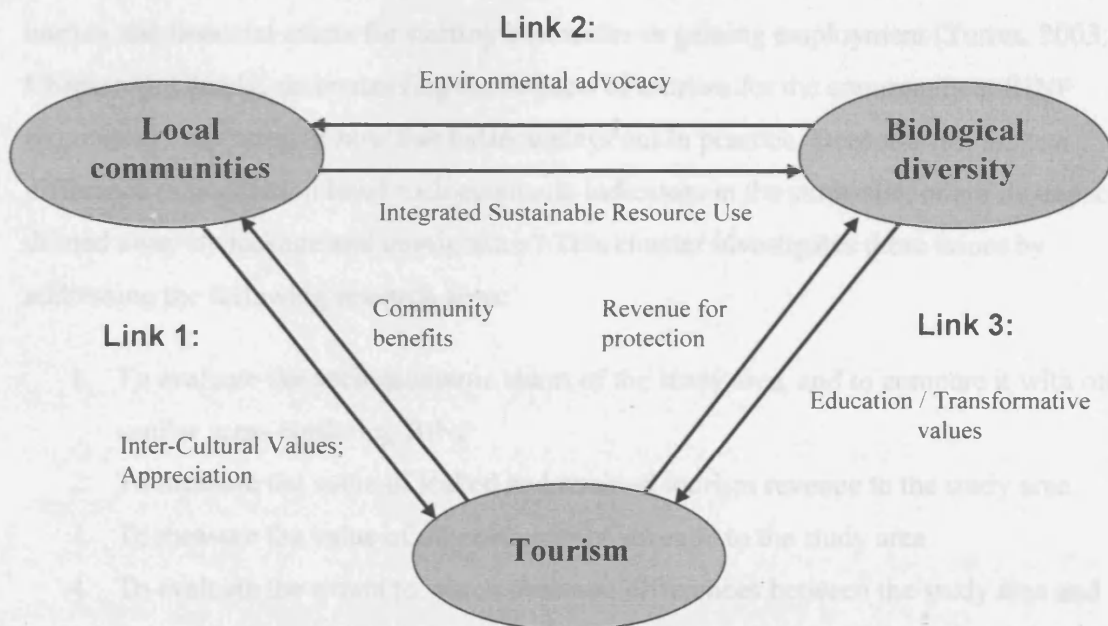


Figure 4.1: The theoretical framework for ecotourism, adapted from Ross & Wall (1999). This chapter addresses aspects of Link 1

4.2 Introduction

Tourism can have very considerable positive impacts on the development status of host communities. For example, it can in theory deliver increases in household income, increased opportunities for education and training, improved access to healthcare, improved roads and water supply, better quality housing, and increased social cohesion and cooperation (Ashley *et al.*, 2001; Chapter 1). The significance of these impacts at the individual and household level can be constrained by inequitable distribution of benefits, an issue considered in Chapter 5. However, the significance of tourism at the population level can also be constrained, by high levels of leakage, and by immigration (Chapter 1). Leakage can drastically reduce the flow of revenue to the host community (Walpole & Goodwin, 2000), and immigration can result in tourism benefits being realised by non-local individuals (Scholte, 2003).

BINP has a well developed tourism industry and, in gorilla tracking, an extremely high value tourism product (Chapter 2). It might therefore be expected that tourism would have a considerable impact on community socioeconomic indicators at the study site. However, the area also meets the usual criteria for high levels of leakage and immigration by skilled individuals, namely being rural and having a human population lacking in the necessary human and financial assets for starting businesses or gaining employment (Torres, 2003; Chapter 1). Clearly, understanding the impacts of tourism for the community at BINP requires an evaluation of how this balance plays out in practice. Does tourism make a difference to population level socioeconomic indicators in the study site, or are its impacts diluted away by leakage and immigration? This chapter investigates these issues by addressing the following research aims:

1. To evaluate the socioeconomic status of the study area, and to compare it with other similar areas bordering BINP
2. To measure the value of leaked and retained tourism revenue to the study area
3. To measure the value of other sources of revenue to the study area
4. To evaluate the extent to which observed differences between the study area and other similar communities bordering BINP are consistent with impacts of tourism reported elsewhere (Chapter 1)

4.3 Methods

4.3.1 Source data

This chapter makes use of data from a wide variety of primary and secondary sources. Primary data collected during fieldwork come from the Baseline Household Survey (BHS), the In-Depth Household Survey (IDHS), semi-structured interviews with key informants, the tourist interview survey, the tour camp survey and UWA registration records, all of which are described in detail in Chapter 3. Secondary data used to compare the study area to other areas around BINP are drawn from published reports in the literature. Data from all these sources were used to carry out three different analyses presented in this chapter; first to compare the socioeconomic status of the study area with other areas around BINP, second to measure the value of tourism revenue to the area, and third to measure the value of other sources of revenue to the area. These analyses are explained in more detail in the following sections.

4.3.2 The socioeconomic status of the study area

The socioeconomic status of the study area was evaluated by measuring relevant indicator variables. Rather than focusing exclusively on material assets and income, variables were selected which represented a wide range of ‘capitals’ under the Sustainable Livelihoods (SL) framework for analysis (Scoones, 1998; Chapter 1). This approach was adopted to give an understanding of socioeconomic status which went beyond money and material possessions alone. The variables chosen can be divided into population level measures which did not vary between households, and household level measures which did vary between households. These are described in more detail in turn in the following two subsections.

4.3.2.1 Population level indicators of socioeconomic status

Population level indicators of socioeconomic status selected were broken into two categories: those relating to community composition, and those relating to education, health and infrastructure. The first category included measures of human capital (Table 4.1), while the second also included measures of physical capital (Table 4.2).

Table 4.1: Measures of community composition at the study site selected for analysis

Number of households in the study area
Number of individuals surveyed in the study area
Number of tribal groups represented in the area and breakdown of group membership
Number of Bakiga clans in the area and breakdown of clan membership
Number of immigrants living in the study area
Number of individuals who had migrated from one village to another within the study area
Proportion of males and females in the study population
Mean age, age structure and age by gender

All community composition data were derived from the BHS. See Chapter 3 for details of how these data were collected. Each individual's migration status was determined by comparing their village of birth to their village of current residence as recorded by the BHS. Individuals were defined as migrants if they were born outside the study area but were normally resident within it at the time of fieldwork. The number of immigrants returned will be an underestimate, because the BHS did not include UPDF soldiers or some senior UWA staff (Chapter 3).

Table 4.2: Measures of education, health and infrastructure selected for analysis

Proportion of population at school
Proportion of adult population with only primary schooling
Proportion of population with any secondary schooling
Education by gender
Provision of schools in the area
Provision of formal healthcare in the area
Provision of water in the area
Provision of electricity in the area
Condition of roads in the area

Data on the education of each individual were drawn from the BHS. The provision of schools, formal healthcare, water, electricity and roads in the area were determined from observations made during fieldwork and interviews with key informants.

4.3.2.2 Household level indicators of socioeconomic status

Seven measures of household socioeconomic status were selected for analysis (Table 4.3).

Table 4.3: Measures of household level assets selected for analysis

Household size	Livestock owned
Number of polygamous households	Land owned, rented and farmed (acres)
Crops grown	Material possessions owned
Material from which house built	

Household size, number of polygamous households, crops grown and household building material data were drawn from the BHS. See Chapter 3 for details of how these data were collected. Mean household size was calculated as the mean number of individuals belonging to each household (for the definitions of household and household membership in this research, see Chapter 3). Livestock, land and material possessions ownership data were drawn from the IDHS. See Chapter 3 for details of how these data were collected. Livestock data were taken from the IDHS rather than the BHS because the former appeared to give more reliable results than the latter, in which some respondents were suspected of understating the number of animals they owned.

4.3.3 Comparing the socioeconomic status of the study area with other areas around BINP

To evaluate the community level impacts of tourism, comparisons of socioeconomic status were made between the study site and the total BINP-Adjacent Population (defined as all the people living in the LC2 parishes bordering the park; BINP-AP hereafter). Study site data used for these comparisons were drawn from the results of this study. BINP-AP data used for these comparisons were mostly drawn from the Albertine Rift Technical Report ‘The Socio-Economic Status of People Living Near Protected Areas in the Central Albertine Rift’ (Plumptre *et al.*, 2004). This report is based on a major survey of the people living adjacent to BINP and other parks in the Central Albertine Rift. It was carried out in 2002, and surveyed a total of 3,907 households along 10km transects from the boundaries of the mountain gorilla parks. Households were surveyed every 250 m along the transects, and in this way a total of 22,812 people were surveyed. 696 of the Plumptre *et al.* (2004) survey households were around Bwindi, and these contained 4545 individuals. Almost all of these people were members of the BINP-AP, although an unspecified number must have lived outside this area because in some cases the 10 km transects extended into a second parish from the park boundary. There is some overlap between the Plumptre *et al.* (2004)

sample and my sample, because between 33 and 41 of the Plumptre *et al.* (2004) survey households were in Mukono parish (the exact number is not specified). The study area covered roughly half of Mukono, so it is estimated that the Plumptre *et al.* (2004) study might have had up to twenty households shared with the BHS. This is just 2.9% of their Bwindi sample households, so the two samples can justifiably be considered to measure different study populations.

The Plumptre *et al.* (2004) report was produced by a group of NGOs, and collected data using rapid survey techniques. Although it states that professional researchers were used, the methods adopted and the lack of peer-review mean that the data it presents must be treated with some caution. Despite these caveats, the report does provide a useful baseline for comparison. Relevant data from it are presented where appropriate alongside the data from this study, in order to facilitate comparison. For categorical data, statistical comparisons are made using the two-sample test for equality of proportions in R 2.3.0 (R Development Core Team, 2006). Unfortunately, the Plumptre *et al.* (2004) report does not give measures of variance around means, so the statistical comparison of continuous variables was not possible.

4.3.4 Leakage and retention of tourism revenue

4.3.4.1 Calculating the monetary value of tourism for the study area

The value of tourism to an area can be measured by calculating the total amount of money the industry brings in to that area and then deducting the amount which leaks away again (known as leakage). Leakage is defined here as the proportion of total tourism revenue which was not retained in the study area, where retained revenue is defined as all tourism revenue which accrued to local people or locally owned businesses at some point (Equation 4.1)²⁵.

$$\text{Leakage} = \frac{\text{Total leaked tourism revenue}}{\text{Total tourism revenue}} \times 100 \quad (\text{Equation 4.1})$$

²⁵ In some studies the proportion of revenue which is re-spent at least once in the local economy (the 'multiplier rate') is also calculated. This was not done here as it was considered near impossible to collect data of sufficient quality to make doing so useful

Calculating leakage requires information about total tourism revenue, and the rate of leakage from businesses which took in that revenue. For the purposes of this study total tourism revenue was defined as the money which at some point was spent by tourists in the study area, either directly, or indirectly through their tour operator (TO) or travel agent (TA). This excludes money paid by tourists to TOs or TAs which was subsequently spent on other elements of the holiday or retained as profit, as this money never made it to Bwindi and is not therefore considered relevant to the local leakage figure. Leakage figures for locally-owned and non-locally owned businesses were calculated differently. For the former, leakage was calculated as all revenue the business spent outside the study area. For the latter, leakage was calculated as all revenue the business did not spend inside the study area. In other words, for locally owned businesses profits were assumed to be retained, whereas for non-locally owned businesses they were assumed to be leaked. The specific methods used to calculate total revenue and leaked revenue are detailed in the following two sections. All values were calculated for the year beginning 1/11/03 and ending 31/10/04.

4.3.4.2 Total tourism revenue within the study area

Total tourism revenue within the study area was calculated using data from the tourist survey and from interviews with tour camp managers (see Chapter 3 for general details of these methods). During the spending interview, tourists were asked about all the money they had spent in the study area, including accommodation, food, drinks, craft purchases, park activities other than gorilla tracking, tips and guide fees. In cases where tourists had not paid for accommodation or meals at tour camps because they were on a package tour, the amount spent by the TOs on each tourist was obtained from the camps. This was typically less than the face value 'rack rate' charged by the camps, because TOs were usually given a reduced rate (about 10%) as commission for bringing visitors to a camp. The amount of spending money per tourist paid to staff accompanying tour groups was also estimated from interviews with drivers and guides.

As the camps were very different in price and seemed to attract different types of tourist, it was decided that mean spend in various spending categories (accommodation, shopping, UWA, Community Walk, crafts, tips, donations and tour staff) per tourist at each camp should be calculated using the survey data, and then multiplied by the total number of

visitors received by that camp over the year to reach an estimated total for the spending of tourists (and their TOs) in the study area. Mean spend per tourist was calculated in each spending category using the responses from all survey respondents for whom the relevant data had been collected. The number of completed questionnaires differed in each spending category, because in some cases tourists could not be re-interviewed after completing their spending before leaving BINP, meaning that certain items were missing from their data (see Chapter 3 for full details of sampling strategy). Estimates of total spending per tourist at each camp were reached by adding together the means from each category. This addition of means which were based on different sample sizes was considered justified because it allowed all the data collected to be used, rather than only the relatively small number of fully complete questionnaires. The total number of gorilla-trackers and the number staying at each camp were taken from the UWA registration survey. Tourist accommodation data were only available for the last 10 of the 12 months in question, so the proportion of visitors at each camp during these 10 months was multiplied by the total number of gorilla-trackers for the entire year to estimate the total number of tourists at each camp over that year²⁶. Finally, total tourism revenue was calculated as the total mean spend per tourist at each camp multiplied by the estimated number of tourists staying at that camp during the year in question.

It was decided to exclude from the leakage analysis the revenue generated through the sale of gorilla tracking permits. This was done because permits were purchased from UWA headquarters in Kampala, where the revenue was added to that received by UWA from the government, and used to fund all aspects of UWA's activities. It therefore could not be said to have been spent in the study area, a criterion for inclusion in this analysis. In addition, the enormous value of the gorilla tracking permit revenues would risk swamping the results for other tourism revenues in this analysis and obscuring interesting findings. A full analysis of the revenue generated by permit sales and its significance for conservation is included in Chapter 7. Revenue generated through other UWA activities such as the waterfall walk was included in the analysis in the present chapter, because it was spent locally on site.

²⁶ This approach was considered more accurate than using the records kept by the camps themselves, which were found to be extremely unreliable

4.3.4.3 Calculating leaked and retained revenue

To calculate leakage for tourism businesses owned by local individuals (born or living in the area), data were required for spending on goods and services outside the study area, on the assumption that all other revenues were not leaked. Informal observations in the field suggested that the numerous locally-owned small businesses involved in tourism (such as craft shops) turned over very little money and spent very little outside the study area. It was therefore decided to consider all their revenue as retained, to avoid investing a lot of effort to collect data on the leakage of very small sums. Money paid to UWA for non gorilla-tracking park activities was also considered to be 100% retained as the sums involved were small and the authority spent at least as much money in the local economy. After removing these organisations from consideration, only the tour camps were included in the analysis of leakage from locally owned businesses.

Figures for money spent outside the local area by tour camps were difficult to attain, particularly for occasional purchases such as furniture or linen. As a result it was decided to focus on the purchase of food, as this was a major expense and something which had to be bought very regularly, meaning that there would be no extraordinary rare purchases (such as of a vehicle) which might skew the results if other purchases were included. To collect these data, each camp was given a booklet with columns to complete, detailing, for all items bought outside the study area, the item purchased, its price, and the date it was bought. A known individual in each camp was given the responsibility of completing the booklet, and they were visited regularly to ensure that they were doing so. These data were collected for the month of October 2004. This was a mid-season month for tourism roughly typical of the year (see Chapter 8). To calculate the total spend outside the study area for the whole year, the October spend was divided by the number of tourists gorilla tracking from that camp in that month and then multiplied by the total number of tourists gorilla tracking from that camp over the whole year, as estimated from UWA records (see previous subsection for details). It is accepted that food purchases are not a pure variable cost with respect to tourist numbers, because the camps buy food to feed their staff, but this should not matter here because almost all food bought for staff was purchased locally and therefore would not show up as leakage in this analysis.

To calculate the revenue retained in the area from non-locally owned businesses, it was necessary to know how much money they spent in the study area (the assumption being that remaining revenue was leaked from the area as profit or spending on non-local goods and services). The analysis of local spending for these businesses was limited to the purchase of foods, for the same reasons and using the same methods as detailed above (except that spending inside rather than outside the study area was recorded). In addition, spending on staff salaries was included as an element of local spending, on the assumption that they were 100% retained. In practice this is unlikely to be the case, but this flaw was accepted because measuring re-spending of staff salaries outside the local area would have been extremely complex and time consuming. All salaries were determined from interviews with camp managers. The retained revenue figure for non-local camps given in the results section is the sum of the salary and local food spending figures. These values are not given separately because information regarding the pay of senior staff was a sensitive issue for the tour camps and assurances were given to them that they would not be explicitly revealed.

Finally, the net overall value of tourism to the study area was calculated by deducting the total leaked tourism revenue figure from the gross tourism revenue figure. Leakage was also calculated as a proportion of total revenue using Equation 4.1.

4.3.5 Calculating the value of other sources of income to the study area

To facilitate comparison with the results of the tourism leakage analysis, revenue from sources other than tourism was taken to include only flows of physical cash into the study area, excluding less quantifiable inputs such as investment by the government in schools, hospitals or roads. A list of these sources of income was drawn up, and where possible, their annual value to the study area was calculated by triangulating data from several sources. In the case of household level income for local residents, first a list of all non-tourism, non-local sources of income was made, and then data from the IDHS were used to calculate mean incomes per household for each of these sources for specified time periods (see Chapter 3 for full details of the IDHS). Working on the assumption that these results were typical for the community at large, they were then scaled up from the sample to the population level to return an overall estimate of value to the community of each income source for the same study year considered in the leakage analysis. Access to specific data

on the UWA salaries paid to local people was denied, so estimates had to be made based on responses to the IDHS as for other non-local sources of income.

4.4 Results

4.4.1 The socioeconomic status of the study area and comparison with other areas around BINP

4.4.1.1 Community level indicators of socioeconomic status

4.4.1.1.1 Community composition

The baseline survey found 589 households across the six study villages, with a total of 2,821 members. These individuals were drawn from 13 East African ethnic groups. Of these, the Bakiga were strongly dominant (96.4% of individuals), and only five other groups had four or more members (Table 4.4). These results are very similar to those given by CARE (1994), who found that 94.5% of people living around BINP were Bakiga.

Table 4.4. The breakdown of individuals by ethnic group in the baseline household survey (n = 2821). Only those groups found to include four or more individuals are shown (this excludes 7 groups containing a total of 9 individuals).

Ethnic group	No. of individuals	% of population
Bakiga	2702	96.4
Batwa	44	1.6
Bafumbira	33	1.2
Congolese *	15	0.5
Banyankore	6	0.2
Bagishu	4	0.1

* Some respondents gave their ethnicity as Congolese, and these individuals are grouped together here despite probably belonging to several different groups

A total of 12 different Bakiga clans were found in the baseline survey, with no clan data being returned for 21 individuals (Table 4.5). Best represented were the Bayonga, Balengye, Basigyti and Bakyimbiri. Clan membership was not randomly distributed between villages ($\chi^2 = 3207.1$, $df = 55$, $p < 0.001$). Rather, some clans were strongly concentrated in one village. For example, 85.3% of the Bayonga lived in Nkwenda village, where they comprised 77.2% of the total village population.

Table 4.5: The number of individuals in the baseline household survey belonging to each Bakiga clan

Clan	No. of individuals	% of Bakiga
Bayonga	611	22.8
Balengye	598	22.3
Basigyi	496	18.5
Bakyimbiri	321	12.0
Bungura	192	7.2
Bazigaba	174	6.5
Bagyesera	123	4.6
Basirima	115	4.3
Bahunde	20	0.7
Bagongo	12	0.4
Bayundo	12	0.4
Batimbo	7	0.3

Most individuals sampled by the baseline household survey were born in Mukono parish (2341 (83.0%) were born locally; 480 (17.0%) were immigrants). This result will be a slight underestimate of true immigration, as the baseline survey did not include soldiers or high ranking UWA staff living at park headquarters. 375 (72.9%) of the recorded immigrants were Bakiga, meaning that 86.1% of the Bakiga population was born inside Mukono parish. Just 13.0% of the non-Bakiga population was born inside the parish. A large proportion (72.0%) of Bakiga individuals were living in the same village in which they were born. Amongst the non-Bakiga, only 1.7% were living in their natal village. Amongst Bakiga individuals aged 16 years and over, migration away from the natal village was strongly linked to gender ($\chi^2 = 277.0$, $df = 1$, $p < 0.001$; Table 4.6). 78.7% of Bakiga men were living in their natal village, whereas 77.0% of Bakiga women had migrated at least as far as the neighbouring village. No other published migration data could be found for the area, so no direct comparison of the study area with neighbouring parishes was possible.

Table 4.6: Frequency of inter-village migration within the study area for Bakiga aged over 16

	Not migrated	Migrated
Men	498	135
Women	219	452

1361 (48.2%) people in the study population were male, and 1460 (51.8%) were female. In the Plumptre *et al.* (2004) Bwindi population 2262 individuals were male (49.77%) and 2283 were female (50.23%)²⁷. These sex ratios are not significantly different from one another ($\chi^2 = 1.56$, $df = 1$, $p = 0.212$). The mean age of the study population was 19.64 (\pm SD 16.70), and the median age was 15. The mean age of males was 19.84 (\pm SD 16.75), and of females was 19.46 (\pm SD 16.66). These mean ages are not significantly different ($t_{2812} = 0.593$, $p = 0.553$), and appear very similar to those found in the Plumptre *et al.* report (20.8 for men, and 20.0 for women). The age structure of the study community was heavily skewed towards young people (Figure 4.2).

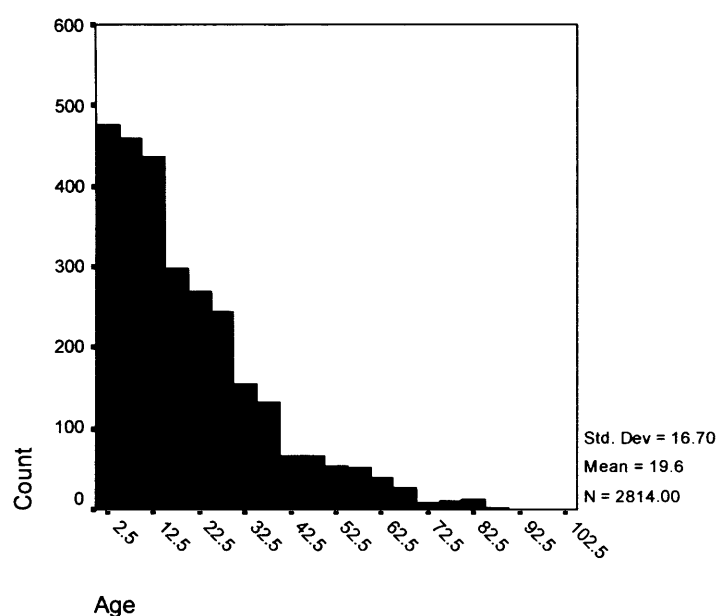


Figure 4.2: The age structure of the study population

4.4.1.1.2 Education, healthcare and infrastructure

Just over a third of the study population were engaged in full time education at the time of the survey (1002 individuals; 35.5%). This proportion was significantly lower than the figure reported by Plumptre *et al.* (2004) for their Bwindi population, which was 43.24% ($\chi^2 = 42.75$, $df = 1$, $p < 0.001$). Of the adult (16 and over) population at the study site not in full time education, 146 individuals (11.8%) had no education at all, 912 (74.0%) had

²⁷ Total Bwindi sample population and gender composition in the Plumptre *et al.* (2004) report were estimated by multiplying the number of Bwindi households they sampled (696) by their mean household size (6.53), and rounding to the nearest individual

completed only some form of primary level education, and 169 (13.7%) had completed some secondary or further level education.

When looking at the entire study population (including children and those still at school), 1777 people (63.0%) had completed only some form of primary education, and 274 people (9.7%) had completed some form of secondary education. A significantly smaller proportion of people in the Plumptre *et al.*, (2004) study had some primary education (60.2%; $\chi^2 = 5.61$, $df = 1$, $p = 0.018$), but a significantly greater proportion (13.74%) had some secondary education ($\chi^2 = 25.86$, $df = 1$, $p < 0.001$). Women in the study population were much more likely than men to have no education at all, and as the level of education increased the proportion of men increased (Figure 4.3). Indeed, the mean number of years of education completed for men (5.49) was significantly greater than that for women (3.78; $t_{1225} = 9.789$, $p < 0.001$). The Plumptre *et al.* (2004) survey does not include any data on the educational status of each gender separately, so it was not possible to compare their figures with the results of this study.

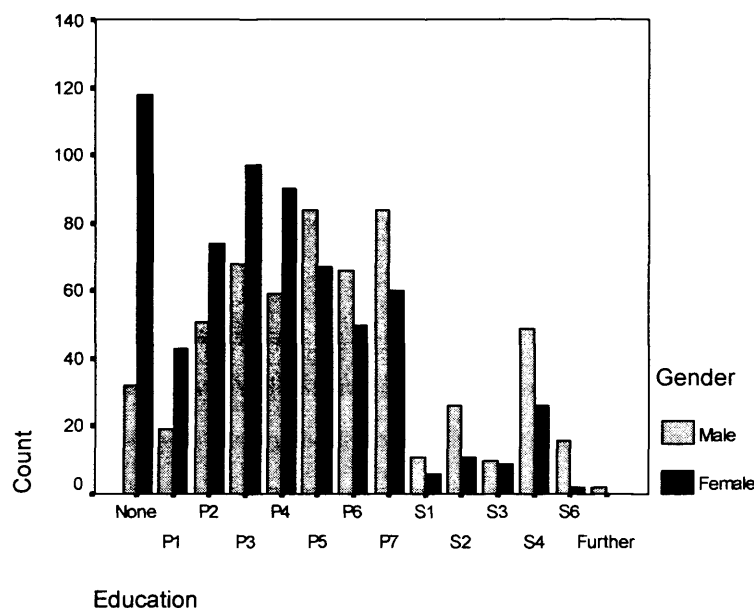


Figure 4.3: Frequency bar chart showing the highest completed year of education for adults (16 and above) not currently in full time education (Total N = 1233), broken down by gender. P stands for primary and S for secondary.

The six study villages contained 3 main primary schools. All of these were day schools. One of them (Kanyashande) was a state funded school at which no formal fees were paid,

under the Government's Universal Primary Education (UPE) programme. The other two schools (Mukono Parents' and Bwindi Orphans') were privately owned and charged fees, except in the case of the Orphans' school which was free to members of the Orphans' group (further details of this group are given in Chapter 2). In practice all three schools charged some level of fees because Kanyashande charged "teachers' lunch" and "building" fees in lieu of official school fees to make up for shortfalls in funding. The study area (and indeed the whole parish) did not have a secondary school. The closest of these was in Butogota, which is 17 km by road from Buhoma. Pupils from the study area attending secondary school were therefore obliged to board during term-time, as it was too far to walk to school each day.

The study area was well equipped with healthcare facilities, having a newly built health centre (Buhoma Community Health Centre; BCHC) located in Buhoma village. This facility had two in-patient wards, an out-patient wing and a maternity ward. It was founded by an American couple, with funding from the Episcopal church in the USA. The health centre provided basic medical services to local people at cost price, and the staff also went on mobile clinic visits to Batwa communities in the area who received treatment free of charge. For more serious problems the only option was to go to the district hospital in Kambuga, which was about 2 hours by road from Mukono. This journey was prohibitively expensive for most people. As well as the western healthcare available in the study area, local people made extensive use of traditional medicine, and there were several practising traditional healers in the area.

People living in the study area collected water from the river Munyaga in the bottom of the valley within Mukono parish, or from run-off collected from iron sheet roofs during rainstorms. During the study year a major new 'gravity water' project was initiated, which has subsequently been completed. This system collects water in a large header tank inside the park, from which it flows downhill through the study area to Kanyashande village. Along the way there are various branching pipes which lead to taps located amongst clusters of households. The project was part funded with money from Buhoma Community Rest Camp, which will be discussed in more detail in the following chapter. The gravity water system makes water much more easily accessible to households and represents a

major development intervention in the area, but due to its incomplete status at the time of fieldwork its full impact cannot be analysed here.

The study area had no mains electricity supply, and although a new power line into the region was being constructed at the time of fieldwork, it was not planned to reach the study area. As a result, the only electricity available was produced by fuel burning generators, or by solar panels. These were only found in the tour camps and at the home of the American couple running the hospital, meaning that electricity was completely unavailable to most local people. There were plans to install a small hydroelectric turbine in the river, but this has not yet happened at the time of writing.

Like the rest of Kanungu district, roads in the study area were not metalled. Instead they were made of 'murram' clay mixed with stones and levelled periodically with a grader provided by the government. These roads were adequate when recently graded, but poor after heavy rains and a lot of use, eventually requiring 4x4 vehicles to be passable. The main road into Mukono parish from Butogota town was graded about once every 18 months, and was in very good condition by comparison with much of the region. This was the road predominantly used by tourist vehicles. The one other road in the parish was in less good condition, but was passable by 4x4 vehicles. This road was occasionally used by tourist vehicles going to visit Ruhija on the eastern side of BINP, but was often impassable.

No quantitative comparisons could be made between the study area and the rest of the region with respect to roads, water or electricity. However, observations and discussions with local residents suggested that the main road in the study area was unusually good for the region, that fresh water was unusually abundant in the area already, and would be even more so with the gravity water project, and that outside Kanungu and Butagota towns, the study area probably had more sources of electricity than anywhere else in the district.

4.4.1.2 Household level indicators of socioeconomic status

All but 17 individuals were assigned to a household in the survey, with the mean household size being 4.76 individuals (\pm SD 2.40). This compares to an average household size of 6.53 reported around BINP in the Plumptre *et al.* (2004) report, suggesting that the study area had unusually small households for the region. This finding could not be confirmed

with statistics because the Plumptre *et al.* (2004) report does not give a measure of variance about the mean household size, and because it does not give a clear definition of household. Of the 589 study households, 40 had polygamous male heads with 2 wives (so twenty individuals) and 12 had polygamous male heads with 3 wives (so four individuals). This is a total of 52 households, or 8.8%. The Plumptre *et al.* (2004) study does not report the extent of polygamy in their sample so comparison with the wider BINP-AP was not possible.

The mean amount of land owned by each household in the in-depth survey was 5.26 acres (\pm SD 11.81). A further 0.19 acres per household were rented (\pm SD 0.42). The total amount of land cultivated per household in the in-depth survey was 5.09 acres (\pm SD 11.13). These values cannot be compared with the other surveys because in those land is measured using fields as units, and these varied in size enormously in the study area.

The commonest livestock found in the IDHS were chickens and goats (Table 4.7). Where data for comparison were available, it appeared that ownership of livestock in the study area was comparable with that in other areas around BINP, apart from the case of chickens and cows which seemed somewhat rarer in the study area.

Table 4.7: Livestock owned by households in the IDHS and by households around BINP in the Plumptre *et al.* (2004) survey

Livestock	No. of households with animal	% of households with animal	Mean no. per household	Mean number per household in Plumptre <i>et al.</i> survey
Beehives	22	15.9	1.03 \pm SD 2.94	-----
Chickens	71	51.4	1.70 \pm SD 2.64	3.35
Cows	25	18.1	0.60 \pm SD 2.71	1.01
Fish ponds	9	6.5	0.07 \pm SD 0.29	-----
Goats	85	61.6	2.17 \pm SD 2.78	2.66
Pigs	49	35.5	0.56 \pm SD 1.04	0.26

The data regarding material possessions of households in the IDHS are shown in Table 4.8. A significantly lower proportion (86.2%) of Bwindi households in the Plumptre *et al.* (2004) study owned radios than in this study ($\chi^2 = 15.43$, $df = 1$, $p < 0.001$), but bicycle (22.56%) and motorbike (1.72%) ownership were not found to differ significantly.

Table 4.8: Material possessions owned by households in the IDHS

Asset	No. of households with item	% of households with item	Mean no. per household
Bicycles	22	15.9	0.17 ± SD 0.39
Cars	1	0.7	0.007 ± SD 0.09
Charcoal stoves	16	11.6	0.12 ± SD 0.32
Irons	20	14.5	0.15 ± SD 0.38
Lanterns	132	95.7	1.99 ± SD 1.12
Mobile phones	9	6.5	0.07 ± SD 0.29
Motorbikes	1	0.7	0.007 ± SD 0.09
Plates	53	38.4	3.64 ± SD 6.59
Radios	119	86.2	1.06 ± SD 0.65
Tea cups	52	37.7	2.87 ± SD 5.05
Watches	69	50.0	0.61 ± SD 0.74

The crops most commonly grown by households in the BHS were bananas, sweet potatoes and millet (Table 4.9). Cash crops such as tea and coffee, and crops sometimes sold, such as eucalyptus trees, were also commonly grown (Table 4.9).

Table 4.9: Frequency of occurrence for the commonest crops grown by households in the baseline survey

Crop	No. of households with item	% of households with item
Bananas	555	94.2
Beans	503	85.4
Cassava	355	60.3
Coffee *	114	19.4
Eucalyptus	147	25.0
Ground nuts	206	35.0
Maize	223	37.9
Millet	358	60.8
Sorghum	176	30.0
Sweet potatoes	429	72.8
Tea *	139	23.6
Yams	315	53.5

* denotes a true cash crop which cannot be consumed by the household

The Plumptre *et al.* (2004) survey does not record all the crops grown by each household, but it does record those grown exclusively for sale by over 40% of households. These were

coffee, tea, tobacco and eucalyptus trees²⁸. Direct comparison with eucalyptus in my survey is difficult because some households were growing trees for home consumption (for fuel or construction) rather than sale. Nonetheless it seems clear that when compared to households around the rest of BINP, a comparatively small proportion of households in the study area were growing cash crops (Table 4.9).

Data regarding the construction of houses were returned for 586 of the 589 households found in the baseline household survey. Of these, 504 (86.0%) were semi-permanent (mud walled), and 81 (13.8%) were permanent (brick walled). One house had walls made from banana fibres. The 696 Plumptre *et al.* (2004) Bwindi households differed significantly from the study area households in the proportion built using each material ($\chi^2 = 45.26$, $df = 1$, $p < 0.001$). Only 2.73% of their study households were permanent, whereas 96.55% were semi-permanent. The study area houses were mostly roofed with iron sheets (494; 84.3%), with the others roofed with banana fibres (92; 15.7%). The Plumptre *et al.* (2004) Bwindi households differed significantly in the proportion roofed with each material ($\chi^2 = 8.06$, $df = 1$, $p = 0.005$). 77.87% of their study households were roofed with iron-sheets, and 19.97% with banana fibres.

4.4.2 Leakage and retention of tourism revenue

4.4.2.1 Total tourism revenue within the study area

The total number of tourists registered as gorilla-trackers by UWA at Buhoma during the year beginning November 1st 2003 was 5133. The proportion of gorilla-trackers staying at each camp over the ten months from January to October 2004 were used to estimate the proportion of these 5133 staying in each camp (Table 4.10).

²⁸ Tobacco is not grown by any household in the study area, most likely because of climatic conditions resulting from Mukono parish being the lowest in altitude around BINP

Table 4.10: The number and percentage of gorilla trackers staying at each camp between 1/2/04 and 30/11/04, and the estimated total number of gorilla trackers staying at each camp between 1/11/03 and 31/10/04

Camp name	No. of visitors	Percentage	Estimated total
Gorilla Forest Camp	984	24.8	1273.0
Mantana Safaris camp	181	4.6	236.1
Volcanoes	406	10.2	523.6
Lake Kitandara	394	9.9	508.2
African Pearl Safaris Buhoma Homestead	371	9.4	482.5
Bwindi View Camp	294	7.4	379.8
Buhoma Community Rest Camp	1333	33.6	1724.7

From interviews with tour drivers it was established that drivers and guides accompanying trips to the more expensive tour camps (Gorilla Forest Camp, Mantana Safaris and Volcanoes) were paid in the region of 50,000 USh per day spending money by their employers. Those accompanying trips to the other camps were paid in the region of 35,000 USh per day. This led to considerable variation in spending on tour staff between different camps (Table 4.11). The tourists staying at each camp also differed considerably in their mean total spend on accommodation, shopping, UWA activities, the community walk, crafts, tips and donations (Table 4.11; further analysis of differences between tourists is presented in Chapter 8).

Using the estimates for total spending per tourist at each camp (Table 4.11) and the total number of tourists staying at each camp for the study year (Table 4.10), the absolute total spending by tourists who stayed at each camp was calculated (Table 4.12). These values were then summed to give an estimated total tourism revenue to the study area during the study period (not including gorilla permits) of 3,051,088,452 USh (just over 3 billion Ush; Table 4.12). This value equates to approximately \$1,525,544 US (using a rule of thumb exchange rate of 2000 USh to \$1 US).

Table 4.11: The mean spend per tourist at each camp in various different spending categories. Values are given in Uganda shillings (USh) because the majority of transactions were carried out in this currency. Where values were originally in \$US, they have been converted to USh using the appropriate exchange rate for the week the data were collected (see Chapter 3). The estimated total spend for each camp is given in both USh and \$US for ease of comprehension, with the \$US value being calculated using a rule of thumb exchange rate of \$1US = 2000 USh. The more accurate USh values are used in all further calculations (see below). The number in brackets after each value refers to the sample size used to calculate each mean (see Section 4.3.4 for explanation).

Camp name	Number interviewed	Accom.	Shopping	UWA	Community Walk	Crafts	Tips	Donations	Tour staff	Mean total spend
Gorilla Forest Camp	76	1274166.0 (76)	0 (76)	12166.7 (72)	1041.7 (72)	27728.8 (59)	41328.4 (74)	2131.2 (61)	52818.6 (76)	1411381.4 (\$705.7 US)
Mantana Safaris camp	14	481550.0 (14)	0 (14)	2857.1 (14)	2142.9 (14)	18300.0 (10)	28428.6 (14)	9090.9 (11)	43877.5 (14)	595556.6 (\$297.8 US)
Volcanoes	19	579063.2 (19)	263.2 (19)	6315.8 (19)	0 (19)	6437.5 (16)	20805.3 (19)	625.0 (16)	53289.5 (19)	672650.4 (\$336.3 US)
Lake Kitandara	55	440153.9 (52)	601.8 (55)	19847.8 (46)	9782.6 (46)	25779.4 (34)	23900.0 (50)	10138.9 (36)	22528.6 (54)	545051.9 (\$272.5 US)
African Pearl Safaris Buhoma Homestead	50	384880.0 (50)	0 (50)	11400.0 (50)	3000.0 (50)	9451.6 (31)	35037.5 (48)	2281.2 (32)	30566.6 (50)	477383.6 (\$238.7 US)
Bwindi View Camp	27	54770.4 (27)	1796.3 (27)	13333.33 (27)	1250.0 (24)	5181.8 (22)	10625.9 (27)	954.6 (22)	5892.2 (27)	92637.9 (\$46.3 US)
Buhoma Community Rest Camp	122	71192.6 (122)	702.5 (122)	9243.7 (119)	3277.3 (119)	8693.2 (88)	12646.5 (115)	956.5 (92)	17385.3 (122)	127020.6 (\$63.5 US)

Table 4.12: The estimated total spend per tourist staying at each camp (in USh), the number of tourists at that camp during the study year and the estimated grand total spend per camp (Column 1 multiplied by Column 2)

Camp name	Total spend per tourist	Estimated total number of tourists	Grand total spend
Gorilla Forest Camp	1411381.4	1273.0	1,796,688,522.0
Mantana Safaris camp	595556.6	236.1	140,610,913.3
Volcanoes	672650.4	523.6	352,199,749.4
Lake Kitandara	545051.9	508.2	276,995,375.6
African Pearl Safaris Buhoma Homestead	477383.6	482.5	230,337,587.0
Bwindi View Camp	92637.9	379.8	35,183,874.4
Buhoma Community Rest Camp	127020.6	1724.7	219,072,428.8
Total Revenue			3,051,088,452 (\$1,525,544 US)

4.4.2.2 Leaked and retained revenue

Total leakage of tourism revenue from all of the tour camps in the study area during the study year was estimated to be just over 2.3 billion USh (about \$US 1.15 million), or 89.2% of camp revenue (Table 4.13).

Table 4.13: The estimated total revenue for each camp during the study year, and the percentage and amount of this revenue which was retained in the study area or leaked out of it. Values are given in Uganda shillings

Camp name	Estimated annual revenue	Estimated revenue retained	Estimated revenue leaked
Gorilla Forest Camp	1,622,013,318	57,600,000 (3.6%)	1,564,413,318 (96.4%)
Mantana Safaris camp	113,693,955	31,796,476 (18.0%)	81,897,479 (72.0%)
Volcanoes	303,197,490	29,757,794 (9.8%)	273,439,696 (90.2%)
Lake Kitandara	223,686,211	19,205,371 (8.6%)	204,480,840 (91.4%)
African Pearl Safaris Buhoma Homestead	185,704,599	11,689,533 (6.3%)	174,015,066 (93.7%)
Bwindi View Camp	20,801,797	16,461,226 (79.1%)	4,340,571 (20.9%)
Buhoma Community Rest Camp	122,785,877	112,530,958 (91.6%)	10,254,919 (8.4%)
Total revenues		279,041,358 (10.8%)	2,312,841,889 (89.2%)

Combining the leakage figure from the tour camps (Table 4.13) with the overall total tourism revenue for the study area (US\$ 3.05 billion from Table 4.12), gives a total leakage rate from the study area of 75.8%. The total retained revenue in the study area (leaked revenue subtracted from overall revenue) was estimated to be US\$ 738,246,563, or roughly \$370,000 US.

4.4.3 The value of other sources of income to the study area

Opportunities for local people to earn non-tourism revenue from outside the study area were limited. Those identified for local households were: the sale of tea and coffee, remittances from relatives or friends living outside the study area, and employment by non-local employers. The value of each of these activities is considered in turn below.

Tea was grown and sold as a cash crop by many households in the study area (139 of the 589 sampled in the BHS). All tea was sold to the Kayonza Growers Tea Factory, which operated as a limited company owned by the growers themselves. The price of tea at the time of fieldwork was 150 shillings per kilo, and farmers went to the factory (about 20 km away) once a month to collect their income. At the end of each year, if the factory had made a profit, a windfall dividend was supposed to be paid out, but a loss had been made for several years prior to fieldwork so this had not happened²⁹. Of the 57 households in the IDHS which grew and sold tea, the mean return on tea sales for the three months prior to interview was 83,482 US\$ per household (\pm SD 94,347). Assuming that this mean is an appropriate estimate of tea income for all households involved in tea production throughout the study area, the total value of tea production per quarter is estimated at $139 \times 83,482 = 11,604,061$ US\$ (about \$5800 US). Tea grows fairly constantly all year round, so multiplying by 4 gives an estimated annual return of 46,416,246 US\$ (about \$23,200 US).

Coffee was also widely grown in the study area, being cultivated by 114 of the households in the baseline survey. Returns from coffee growing for the 35 in-depth survey households which sold it were a mean 10,994 US\$ per quarter (\pm SD 14,765), which is significantly less than quarterly returns from tea ($t = 4.502$, $df = 90$, $p < 0.001$). Coffee also grows all

²⁹ The factory was however doing well in the year of fieldwork, and farmers were expecting a dividend soon

year round, giving an estimated total annual value of the crop to the study area for all 114 households growing it of 5,013,394 USh (about \$2,500 US).

Placing a figure on the value of remittances to the study area proved difficult. Although the IDHS included questions about income from relatives and friends outside the study area, very few respondents admitted to receiving any such income. This could be for several reasons, such as the fear that other local people might find out about substantial household income which had previously been kept secret, with obvious possible political consequences. It was therefore decided not to make use of the limited data collected, as they did not seem of sufficient quality. This omission clearly underestimates non-tourism income to the study area, and is acknowledged as a weakness in the data.

One of the most valuable sources of non-tourism revenue to the study area was employment by non-local institutions. These were the government, the Bwindi Community Health Centre and UWA. The government employed the teachers at the public primary school in Kanyashande, the parish chief (an official position), and various individuals engaged in temporary work (such as road maintenance). The exact total value of all these positions was not determined because not all recipients were sampled by the IDHS. However, it was determined that teachers at Kanyashande school were each paid around 120,000 USh per month after tax, probably rising to around 250,000 USh for the head teacher. The school employed about 8 teachers, giving an estimated total value of school salaries of 14,520,000 USh per year (about \$7,260 US). The value of other government employment to the study area could not be established. The health centre employed a number of doctors, nurses, administrative staff and assistants. Again, the full value of these positions was not determined because not all members of staff were sampled by the in-depth survey. Doctors were excluded from the analysis because none of them were local and they received accommodation and food from BCHC, meaning that they spent almost none of their income in the study area. Of the remaining staff, it is estimated that there were a total of around ten individuals, receiving an average of approximately 150,000 USh per month, making a total of around 18,000,000 USh per year (about \$9000 US). UWA employed 31 individuals covered by the BHS, distributed across 30 households³⁰. Nine of these

³⁰ This includes staff in any role. The following chapter includes a more detailed analysis of returns for employment in the UWA tourism department

individuals were interviewed for the in-depth household survey. Their mean annual salary from UWA was 2,253,333 USh after tax, giving an estimated total value of UWA employment to local people in the study area (mean per person x 31 staff) of 69,853,333 USh per year (about \$35,000 US).

Unfortunately it was not possible to estimate the spending of UPDF personnel within the study area. This was because all access to them and details of their activities were denied by the UPDF commanding officer in the area on security grounds. The number of soldiers present in the area was also confidential, but conversations with local people suggest that there may be in the region of two hundred stationed there. Soldiers were considered by most local people to have lots of expendable income as their food and accommodation were provided, so it is likely that their value to the local economy was in fact considerable.

The total value of the sources of non-tourism income to local people living in the study area quantified above was 153,802,973 USh or \$76,901 US (Table 4.14). These values are certain to be underestimates of all non-tourism flows of revenue into the area, because they do not include remittances, various government jobs, local spending by high ranking UWA employees or the spending of UPDF personnel. However, it seems unlikely that the addition of these figures would dramatically increase the estimated totals (apart from perhaps for the UPDF), and certain that they would not bring the total up to the estimated level of revenue generated by tourism.

Table 4.14: Estimated value of non-tourism sources of income to the study area during the study year. \$US dollar values were calculated using a rule of thumb exchange rate of \$1 US = 2000 USh

Source of income		Value (USh)	Value (\$US)
Cash crops	Tea	46,416,246	23,208
	Coffee	5,013,394	2,507
Employment	Government	14,520,000	7,260
	Health Centre	18,000,000	9,000
	UWA	69,853,333	34,927
Totals		153,802,973	76,901

4.5 Discussion

4.5.1 The socioeconomic status of the study area and comparison with other areas around BINP

Several measures of socioeconomic status returned for the study area were consistent with what would normally be expected for rural south west Uganda (Chapter 2). The population was dense and heavily engaged in agriculture, most people lived in semi-permanent houses roofed with corrugated iron, access to and uptake of education were very limited, and there was almost no electricity or piped water. However, some important differences from other areas around the National Park were identified, and these are discussed in more detail below.

4.5.1.1 Community composition

The ethnic composition, sex ratio, age structure and patrilocal system of adult dispersal found in the study area closely matched reported results from elsewhere in south west Uganda (Ngologozo, 1998; Plumptre *et al.*, 2004; Chapter 2). However, some evidence was found for immigration into the study area. 17% of the sampled population were not born in the study area, and if UPDF and senior UWA staff who were not sampled are added to the survey (estimated at 200 individuals), immigration might be as high as 22%. This value may though not be as significant as it appears, because over 70% of the recorded immigrants were Bakiga, many of whom were probably women migrating from neighbouring villages to marry. No data were collected to measure emigration, but it is probable that a similar number of women emigrated for marriage, and it is also likely that there were some economic emigrants from the area. Overall then it would appear that very few non-Bakiga economic migrants were living in the study area when compared with what might be expected for a rural area with a well-developed tourism industry (Scholte, 2003; Chapter 1). This finding might be due to a lack of jobs in the tourism industry at the study site, or it could be because most jobs were taken by local people from the area. These possibilities are considered in more detail in the following chapter.

4.5.1.2 Education, healthcare and infrastructure

One of the positive impacts of tourism which has been reported in the literature is that it can increase the uptake of education and keep children in school longer, as it provides improved facilities, brings families income to pay fees and creates incentives to gain

qualifications (e.g. Mansperger, 1995; Nelson, 2004; Nelson & Ole Makko, 2005). The results of this study did not find any clear evidence for this phenomenon at the population level. A slightly lower proportion of the study population was attending school than in the wider BINP-AP, and although a higher percentage of the study population had some primary schooling, a lower percentage had been to secondary school. It would therefore seem that with respect to education the study population was fairly typical of the wider BINP-AP. There are two possible explanations for this finding. First, it could be due to problems with the data, or a lack of comparability between the study site and areas surveyed by Plumptre *et al.* (2004). For example, the Plumptre *et al.* (2004) study area included some larger towns around the park which may have provided more educational opportunities than those available in my study area, and the BHS may have missed some children who were away at boarding school, despite respondents being asked to detail temporarily absent members. These possible flaws could mask genuinely superior educational engagement in the study area compared to other equally poor rural areas around BINP. Alternatively, the finding may be genuine. This could be because tourism did not provide families with opportunities or incentives to engage in education as might be expected, or because access to educational opportunities was limited to tourism-engaged households. These possibilities cannot be investigated with population-level data, and are considered in the following chapter.

Another reported benefit of tourism is that it can improve the provision of schools (e.g. Braman, 2001; Williams *et al.*, 2001) and healthcare facilities (e.g. Saville, 2001). Although no quantitative data were available from elsewhere to make a true comparison with other rural areas of Uganda, it does seem that at the time of fieldwork the study area was unusually well equipped with healthcare facilities and primary schools. The healthcare provided by BCHC was undoubtedly excellent by comparison with that available to the rest of the BINP-AP, and the centre was in fact probably second only to the district referral hospital. The water, electricity and transport infrastructure in the study area also appeared to be superior to that available to the rest of the BINP-AP. These findings are all consistent with impacts of tourism reported elsewhere (e.g. Mahony & Van Zyl, 2001; Poultney, 2001), but no causal link can be demonstrated using the data presented in this chapter. Doing so requires a more in-depth investigation of the links between tourism and facilities, and this is provided by the following chapter.

4.5.1.3 Household level indicators of socioeconomic status

Households in the study area were found to have fewer members on average than those in the Plumptre *et al.* (2004) survey. This finding could be due to differences in the population density around the National Park and perhaps immigration, but in the absence of any data measuring population density these possibilities cannot be tested. The smaller households in the study area might mean that they had fewer economically active individuals available to them than those in the wider BINP-AP, but this possibility cannot be explored without information on household age structure, which was not included in the Plumptre *et al.* (2004) report.

One of the most important positive impacts which tourism can bring is increased opportunities to earn money, making it possible to purchase assets which were previously unaffordable, such as material goods and improved housing (Ashley *et al.*, 2001; Torres, 2003). Some evidence for these phenomena was found in the study site. Study area households were more likely to own radios than those in the Plumptre *et al.* (2004) survey, and more houses were built of bricks and roofed with iron sheets. However, the study area households seemed to own fewer cows and chickens on average than the Plumptre *et al.* (2004) households, and appeared less likely to grow cash crops. It would therefore seem that while there were some signs of increased spending power at the population level, there were also some indications to the contrary. One possible explanation for this is that members of households which became engaged in tourism bought material assets (such as radios and improved housing) but abandoned former livelihood activities (such as livestock rearing and cash crop cultivation), either because they no longer had time to do them or because they no longer wanted to. Confirming or rejecting this hypothesis requires more in-depth study of the relationship between tourism and livelihood change, and is considered in the following chapter.

4.5.2 The value of tourism and other sources of income to the study area

The results of this study suggest that during the year in question over three quarters of the money brought into the study area by tourism leaked out again without ever reaching members of the local community. This figure is broadly in line with those reported elsewhere in the literature (e.g. 70% in the Caribbean, Pattullo, 1996), although rather less than the most extreme reported leakage estimate of 99% at Komodo NP, Indonesia

(Walpole & Goodwin, 2000). Given the wide variety of definitions of leakage and of the host economy used by different authors, it is difficult to assess the extent to which any differences between the figures reached here and elsewhere are genuine or simply due to differences in methodology. Either way, of far greater significance to host populations is the absolute amount of revenue which is retained, and what happens to it. The issue of revenue distribution in the study area cannot be tackled with the population-level data presented in this chapter, but is considered in detail in the following chapter. However, comparison of the value of retained tourism revenue with other sources of income to the study area make it possible to draw some conclusions about the significance of tourism to the local economy.

The estimated value of retained tourism revenue in the study area for the year in question was 738,246,563 USh (about \$370,000 US), which is approximately 4.8 times more than the total estimated annual revenue from all other external sources (153,802,973 USh, or about \$76,900 US). The value for total revenue from non-tourism sources is probably a considerable underestimate (see Section 4.4.3), but it seems extremely unlikely that factoring in all the missing flows of income could bring it close to the value of tourism to the study area. It is also possible that earnings from non-tourism sources may have dropped somewhat since the industry was founded in the study area a decade ago, due to local people abandoning former income-generating activities to focus on tourism, but again it is highly unlikely that former non-tourism earnings matched those of tourism at the time of fieldwork for this study. These findings suggest that tourism revenue was very significant to the study area, and that the study area was probably more cash rich at the population level than other parts of the BINP-AP, because other areas did not have a well developed gorilla-tracking tourism industry³¹.

4.6 Conclusions

This chapter has demonstrated that although the study area was in many respects typical of south west Uganda, there were some important differences in population level socioeconomic status between it and the rest of the BINP-AP. The study area had unusually good provision of schools, healthcare facilities and physical infrastructure, and members of

³¹ One exception might be the tourism site at Nkuringo on the south side of the park, but this is a very new development which is unlikely to be generating substantial income for the local economy at this stage

the study population lived in better quality housing. However, there was some evidence that study area households owned less livestock than those in the total BINP-AP, and that they were less likely to grow cash crops. All of these findings are potentially consistent with impacts of tourism described in the literature (Chapter 1), and indeed tourism was found to be far more valuable to the study area than all other sources of external income put together. However, the population level data presented in this chapter cannot be used to identify causal links between the tourism industry and socioeconomic change at the household level, or to understand the distribution of tourism benefits within the community and factors determining access to them. To do that, the population level data need to be disaggregated to the individual and household level. This is the subject of the following chapter.

Chapter 5: Tourism at the household level: distribution, access and local livelihoods

5.1 Chapter summary

The previous chapter demonstrated important differences in the population level socioeconomic status of the study area as compared to other areas around BINP, and found that revenue from tourism was far more valuable to the study area than revenue from other sources. However, the analyses in Chapter 4 could not reveal the distribution of benefits of tourism within the study area, or how access to them was mediated, both of which are critical to understanding the performance of tourism under Link 1 of the ecotourism framework (Ross & Wall, 1999; Chapter 1). This chapter provides this finer scale of analysis by disaggregating the flow of tourism impacts from different sectors of the industry to individuals and households. It begins by examining the distribution of assets across households within the study area, demonstrating the extent of local wealth inequality. It then examines the benefits flowing to the local area from different sectors of the tourism industry, who gained access to these benefits, and factors constraining this access. Finally, it considers how tourism was incorporated into local livelihood portfolios.

5.2 Introduction

The distribution of tourism benefits between households and individuals in host populations is tremendously important to determining the overall impact of tourism (Ashley *et al.*, 2001; Chapter 1). Even if leakage is low, and retained monetary and non-monetary benefits of tourism are considerable, a highly inequitable distribution of these benefits will mean that very few local people actually gain anything (Scheyvens, 2002b). Under these circumstances, the question of how access to tourism benefits is mediated becomes crucially important (Ribot & Peluso, 2003).

There are many factors which can constrain access to benefits and result in their inequitable distribution. First, gender can be a constraint, and it has been widely reported that most individuals employed in tourism in the developing world are men (Hitchcock & Brandenburgh, 1990; Sinclair, 1997). Second, education can be a constraint, with better educated individuals (who for example speak English or have vocational qualifications in tourism) gaining improved access to opportunities (Hitchcock & Brandenburgh, 1990;

Simpson & Wall, 1999). Third, age can be a constraint, with young adults often best placed to access benefits (Liu & Wall, 2006). Fourth, physical location can be important, because people located too far away from engagement opportunities will miss out (Briedenhann & Wickens, 2004; Jurowski & Gursoy, 2004). Finally, tourism benefits are frequently dominated by local elites, measured in terms of both wealth and the ability to employ social networks to capture tourism benefits (Mansperger, 1995; Belsky, 1999; Jurowski & Gursoy, 2004).

The above examples illustrate some of the factors which can constrain access to tourism benefits. However, they do not always apply in the same way to every sector of the tourism industry. These sectors can in fact differ markedly in the impacts they have and in the accessibility to local people of the opportunities they provide (Ashley *et al.*, 2001). For example, locally owned tourism businesses typically deliver more benefits to the host population (Hampton, 1998), and whilst access to full time paid employment is often accessible only to well educated young men (e.g. Hitchcock & Brandenburgh, 1990), other areas of the informal tourism economy, such as handicraft production, can be more accessible to women and the elderly (e.g. Williams *et al.*, 2001). These examples make it clear that understanding how tourism delivers its impacts requires disaggregated analysis of both the tourism industry and the host population – an approach rarely adopted by previous published studies.

A final issue of importance is how tourism activities fit into existing local livelihood activity portfolios (Ashley *et al.*, 2001). Two possible scenarios can be imagined. First, tourism might be incorporated alongside existing revenue generating activities (such as keeping livestock or growing cash crops), with tourism income making it possible to invest more heavily in these activities and increase their productivity. Given the constraints on access detailed above, this might be expected to result in ‘elite-capture’ of both tourism and non-tourism income by well-placed individuals (Scheyvens, 2002b; Mowforth & Munt, 2003). Alternatively, tourism might displace other activities, perhaps because of a lack of time to do both. This could result in non-tourism income-generating opportunities becoming available to other people, but could also reduce household self-sufficiency if farming activities were abandoned, potentially leading to dependency on tourism (Mansperger, 1995). If the first scenario (the ‘incorporation’ hypothesis hereafter) were true,

increasing tourism income should be positively correlated with increases in other sources of income. However, if the second scenario (the ‘displacement’ hypothesis hereafter) were true, increasing tourism income should be negatively correlated with other sources of income.

Most studies of tourism impacts stop at the population level, using the methods applied in Chapter 4. Research which considers the finer scale issues outlined in the above paragraphs is hard to find, but is clearly needed to improve our understanding of how tourism delivers its impacts to individuals and households at the destination. This chapter seeks to meet this need by addressing the following research aims at the study site:

1. To establish the distribution of assets across households and across villages
2. To investigate the flow of benefits from different sectors of the tourism industry to the study population
3. To analyse quantitatively the number of individuals and households engaged in the tourism industry and factors constraining access to engagement
4. To analyse quantitatively the number of individuals and households engaged in different tourism activities, and factors constraining access to engagement in them
5. To investigate how tourism fitted into local livelihood portfolios

5.3 Methods

5.3.1 Source data

This chapter makes use of data collected from the baseline household survey (BHS), the in-depth household survey (IDHS), the tourism business inventory, interviews with key informants, general observations made during fieldwork, and Participatory Wealth Ranking (PWR) exercises. Details of all these methods are given in Chapter 3. Further details of specific methods used in this chapter are given below.

5.3.2 The distribution of assets across households

Where the previous chapter treated the study community as homogeneous, here it is treated as a collection of distinct individuals and households. To explore the extent to which socioeconomic status differed or was consistent across households within the study area, two different techniques were applied. First, inter-household and inter-village variation in

the ownership of key assets described in Chapter 4 was demonstrated graphically and with descriptive statistics. Second, PWR was used to establish locally significant dimensions of wealth in three of the six study villages. These techniques are described in turn below.

To demonstrate the inter-household distribution of assets, descriptive statistics were calculated and histograms drawn for several of the assets quantified in Chapter 4. For each household these were: the amount of land owned (in acres), the number of cows, goats and chickens owned, and the number of radios and lanterns owned. All of these data were drawn from the IDHS. These assets were selected because they were easily comparable and because they were found to be important in the PWR exercises (see below). The descriptive statistics calculated were the minimum, maximum, mean, standard deviation and skew of each variable. The inter-village distribution of the same set of assets was demonstrated graphically using error-bar plots, and statistically by comparing variation between and within the in-depth survey villages using ANOVA in R 2.1.1. (R Development Core Team, 2006).

The second technique used to assess inter-household variation in asset ownership was PWR. (see Chapter 3). PWR exercises were carried out independently in three of the six study villages (Kanyashande, Mukono and Nkwenda). As wealth rank was a variable required for statistical analysis of factors mediating access to tourism engagement (see section 5.3.4 below), a combined rank was required which could be applied consistently across all of the villages within which ranking was carried out. Before this could be justified, it was necessary to do two things. First, where the number of ranks chosen by respondents was different between villages, those villages with a greater number of ranks had to have two ranks merged into one, so that the final sample was consistent in the number of ranks it contained. This was done on a village by village basis using personal judgement of the best ranks to merge. Second, it was necessary to ensure that the ranks thereby attained were consistent across villages in terms of what they were measuring (by no means a certainty as each PWR exercise was independent). This was done by selecting several quantifiable assets which appeared to be important to respondents during the exercises, and using ANOVA to test for rank consistency across villages. The hypothesis tested here was that there would be no significant interaction between rank and village, meaning that ranks were

consistent from one village to another. The variables selected and the results of this analysis are summarised in Section 5.4.1.2 below and detailed in Appendix E.

5.3.3 Local benefits from different sectors of the tourism industry

As far as possible, the monetary and non-monetary benefits to the study area from different sectors of the local tourism industry were determined. For this analysis the tourism industry was divided along the same lines used to describe it in Chapter 2, that is into UWA, the community walk, the tour camps, other tourism businesses, and membership organisations linked to tourism. Reference should be made to Section 2.6 for background information on each of these sectors. Different data were collected for each sector, as the way in which they operated and the benefits they delivered were very different. However, the general aims were to describe how people could engage in tourism through the sector, the skills required for engagement, how much each form of engagement was worth, and how many people directly benefited in each case. Where relevant, the non-monetary benefits provided by the sector were also recorded. Particular attention was given in each case to who controlled access to the sector, and how engagement in it was determined. Data were collected from semi-structured interviews with participants, from key informants in the community and in UWA, from registration records kept by different organisations, from the IDHS and from the BHS.

5.3.4 Quantitative factors determining access to overall engagement in tourism

To test quantitatively the factors determining access to the tourism industry, descriptive statistics of individual and household level engagement in tourism were calculated, and Mixed Effects Models (MEMs; see Chapter 3) were constructed to investigate factors constraining access to tourism engagement. These methods are described in turn below.

To describe overall engagement in the tourism industry, the total number of individuals and households directly engaged in tourism in the BHS were established. This was taken to include all individuals sampled by the BHS who had jobs at the tour camps, other tourism businesses, or in the tourism department of UWA (including guides, trackers and tourist registration staff), all individuals making and selling crafts, and all members of the Orphans', Women's and Porters' groups (which all carried out tourism-related activities; Chapter 2). The figure returned will be a slight underestimate of true engagement, because

some senior UWA staff were missed by the BHS, for reasons discussed in Chapter 3. The distribution of tourism-engaged individuals across the BHS households was described using summary statistics and frequency histograms.

Before MEM could be carried out it was necessary to select test variables and interactions for analysis. These were chosen on the basis of a review of the relevant literature (see Section 5.2 above), and are given in Table 5.1.

Table 5.1: The variables and interactions tested as explanatory factors for individual engagement in tourism. The terms given in brackets are the abbreviated names used for the variables through the rest of this chapter

Variables tested	
Age	No. of years education completed ('Education')
Gender	Other household members involved in tourism? ('Others')
Clan	Distance of household from park gate ('Distance')
Wealth rank ('Wealth')	
Interactions tested	
Age v gender	Age v wealth
Gender v distance	Gender v wealth

The variables age, gender, education (number of years of school completed) and clan of each respondent were all taken from the BHS. Each respondent's household wealth rank was taken from the relevant PWR exercise (see Appendix E). Whether or not respondents had another household member engaged in tourism (the variable 'others') was established from the BHS data. This variable was selected as a measure of the role of social networks in determining access to tourism, as was clan. The variable 'distance' was taken to be the shortest distance from the family home to the nearest road added to the shortest distance along the road network from that point to the park gate. This approach was taken because the study area was very hilly, meaning that straight line distances would greatly underestimate the true distance walked for an individual to reach the park gate from their household, whereas roads follow the contours of the valleys and are a more realistic route. Location data were collected using a hand-held GPS device, as described in Chapter 3. Measurement analysis was carried out using Geographical Information Systems (GIS) software. Interaction terms analysed were selected *a priori* on the basis of whether it seemed feasible that they might influence engagement.

Because wealth ranking data were only available for Nkwenda, Mukono and Kanyshande, MEM analysis was limited to these three villages. It was also decided only to include individuals aged 16 and over and not in full time education in the sample, as young children and those at school were not usually able to fully engage in tourism based livelihoods. A number of child members of the orphans group in Buhoma were involved in tourism, but this was a special case which is discussed further in Section 5.4.2.5 below. Members of the Batwa tribe were also excluded from the analysis. This was because the Batwa were a tourist attraction in their own right (as they were visited by the Community Walk) and were all engaged in tourism, making analysis of their correlates of engagement uninformative.

Before modelling was carried out, the level of correlation between test variables was established. It was found that education was strongly correlated with age ($r = -0.794$, $p < 0.001$, meaning that younger people were better educated), and it was decided that as the correlation coefficient was greater than 0.5 'education' should be removed from the modelling process to be tested separately. It was also decided to test separately the variable 'others'. This was done because if 'others' was analysed alongside other household-level variables (such as wealth rank) it would be impossible to distinguish variance in the response variable due to 'others' from that due to the other household level variable. This would effectively introduce a circularity into the model and invalidate the results. As 'education' was an ordinal variable, its importance was analysed using a t test to see if individuals involved in tourism had on average completed more years of education than those who were not involved in tourism. As 'others' was a categorical yes/no variable, its importance was analysed using a non-parametric χ^2 test to establish whether or not more individuals with fellow household members involved in tourism were themselves involved in tourism than would be expected by chance.

The degree to which the other remaining explanatory variables explained engagement in tourism (treated as a yes/no binary variable) for the sample was tested using Generalised Linear Mixed Models (GLMMs) to generate Minimal Adequate Models (MAMs) in the statistical package R 2.3.0 (function 'lmer'; R Development Core Team, 2006; the benefits of mixed modelling are described in Chapter 3). The explanatory variables and relevant interactions were fitted as fixed effects, whilst village and household number were fitted as random effects (see Chapter 3). GLMMs were used because the response variable was

binary. To carry out the MAM process, an initial maximal model was generated which included all the candidate explanatory terms. This model was then repeatedly simplified by removing terms which did not significantly improve the model, until the model with the lowest Akaike Information Criterion (AIC; a measure of goodness of fit) had been found. The degree to which each term contributed to the quality of the model at each stage was determined by comparing the deviance of the model with and without each term. This gives a χ^2 statistic from which a p value can be derived from the χ^2 distribution. If any p value was greater than 0.05, the term with the highest p value was removed, and the process repeated. This approach to determining significance was preferred to deriving t and p statistics from the model output because it gave single test statistics and p values for each term in the model (including categorical variables with numerous levels), rather than separate statistics for each factor level in the model, making it possible to establish the overall contribution of each term to the model rather than the significance of different levels within each term. Coefficients showing the direction of the effect are reported for each significant variable which was continuous, categorical but with only two levels (e.g. gender), or ordinal (e.g. wealth rank, where the number assigned to each rank has meaning). The effect of other significant variables is explored graphically.

5.3.5 Quantitative factors determining access to engagement in different tourism activities

Two tourism activities were selected for statistical analysis. These were engagement in the handicrafts industry (taken to include any involvement in making or selling handicrafts), and full time employment in a tourism related job (i.e. in the UWA tourism department, in a craft shop or in a tour camp)³². These activities were selected on the basis of their amenability to statistical analysis (because large numbers of people were engaged in them), and how important they appeared to be to the study population following qualitative analysis (see Section 5.4.2 below). Engagement in each activity was used as a binary (yes/no) response variable for statistical testing using the same GLMM approach, and the same test variables, described above and detailed in Chapter 3. Where necessary, certain terms were dropped from the GLMM process and analysed separately, because the small number of individuals involved in each activity made it easy to over-parameterise the

³² Some individuals who worked full time in craft shops fell into both categories.

models. Similarly, in some cases a small number of individuals were removed from the sample where their inclusion had resulted in factor combinations with no variation, which prevented models from converging. The removal of terms and individuals is detailed in the results section for each response variable. Where terms were removed, their importance was tested separately using χ^2 tests if they were categorical, and t tests if they were continuous. As before, 'education' and 'others' were analysed separately in this way, because they could not be included as GLMM predictor variables, for reasons described in section 5.3.4.

5.3.6 Tourism as a component of local livelihood portfolios

Data were collected to gain an understanding of how tourism fitted into the livelihood portfolios of households in the study area. It was not possible to fully test the 'incorporation' or 'displacement' hypotheses proposed in the introduction to this chapter, because doing so would require data on changes in household income from tourism and other sources over time, rather than the single time-point data which were available. However, it was felt that if it could be demonstrated that households with a member engaged in tourism had more income and income-generating assets than those households which did not, this would lend some support to the 'incorporation' hypothesis. This supposition was tested using t -tests. The measures of income and potentially income-generating assets selected for analysis were household level income from tea, the number of acres the household farmed, and the number of cows, goats, chickens and pigs the household owned. These variables were selected on the basis of their amenability for statistical analysis and their apparent significance in household economics as established through personal observations and the IDHS. Further insights into how tourism fitted into local livelihoods were drawn from qualitative data collected on the impacts of each tourism sector, as described in Section 5.3.3 above.

5.4 Results

5.4.1 Wealth and the distribution of assets

5.4.1.1 The inter-household distribution of socioeconomic assets

The inter-household distribution of various key socioeconomic assets recorded in the 138 IDHS households are given in Figure 5.1. Summary statistics for these assets are given in Table 5.2. Land ownership data were not returned for 3 households.

Table 5.2: Descriptive statistics for the inter-household distribution of various key socioeconomic assets across household in the IDHS. N = 138, except in the case of land ownership, where N = 135

Asset owned	Minimum	Maximum	Mean	Median	SD	Skew
No. of acres	0	100	5.26	2.5	11.81	5.79
No. of chickens	0	20	1.70	1	2.64	3.30
No. of cows	0	30	0.60	0	2.71	9.58
No. of goats	0	15	2.17	1	2.78	1.91
No. of radios	0	3	1.06	1	0.65	0.92
No. of lanterns	0	6	1.99	2	1.12	1.01

Graphical presentation of the inter-village analysis of asset distribution shows that households in Nkwenda village consistently had more assets on average than those in the other two study villages (Figure 5.2). However, inter-village variation was only significantly greater than within village variation in the case of radios (Table 5.3).

Table 5.3: Results of ANOVA for the inter-village distribution of various household assets

Variable	<i>df</i>	<i>F</i>	<i>p</i>
Land owned	2, 132	0.820	0.367
Chickens owned	2, 135	3.858	0.052
Cows owned	2, 135	0.454	0.502
Goats owned	2, 135	1.553	0.215
Radios owned	2, 135	12.035	< 0.001
Lanterns owned	2, 135	1.496	0.224

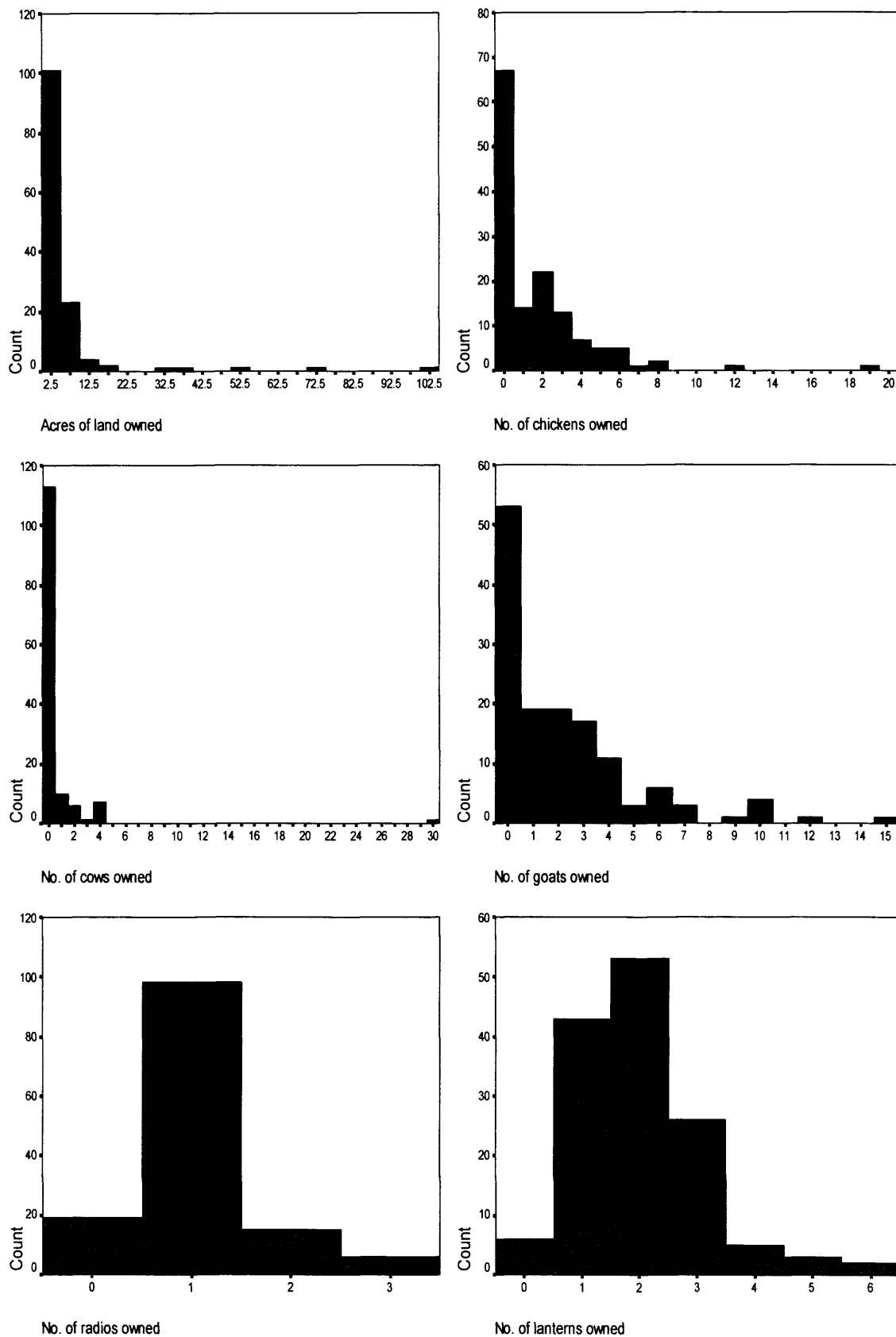


Figure 5.1: Frequency histogram for land ownership (continuous) and bar charts for other (categorical) variables showing the ownership distribution of key assets across households (N =138)

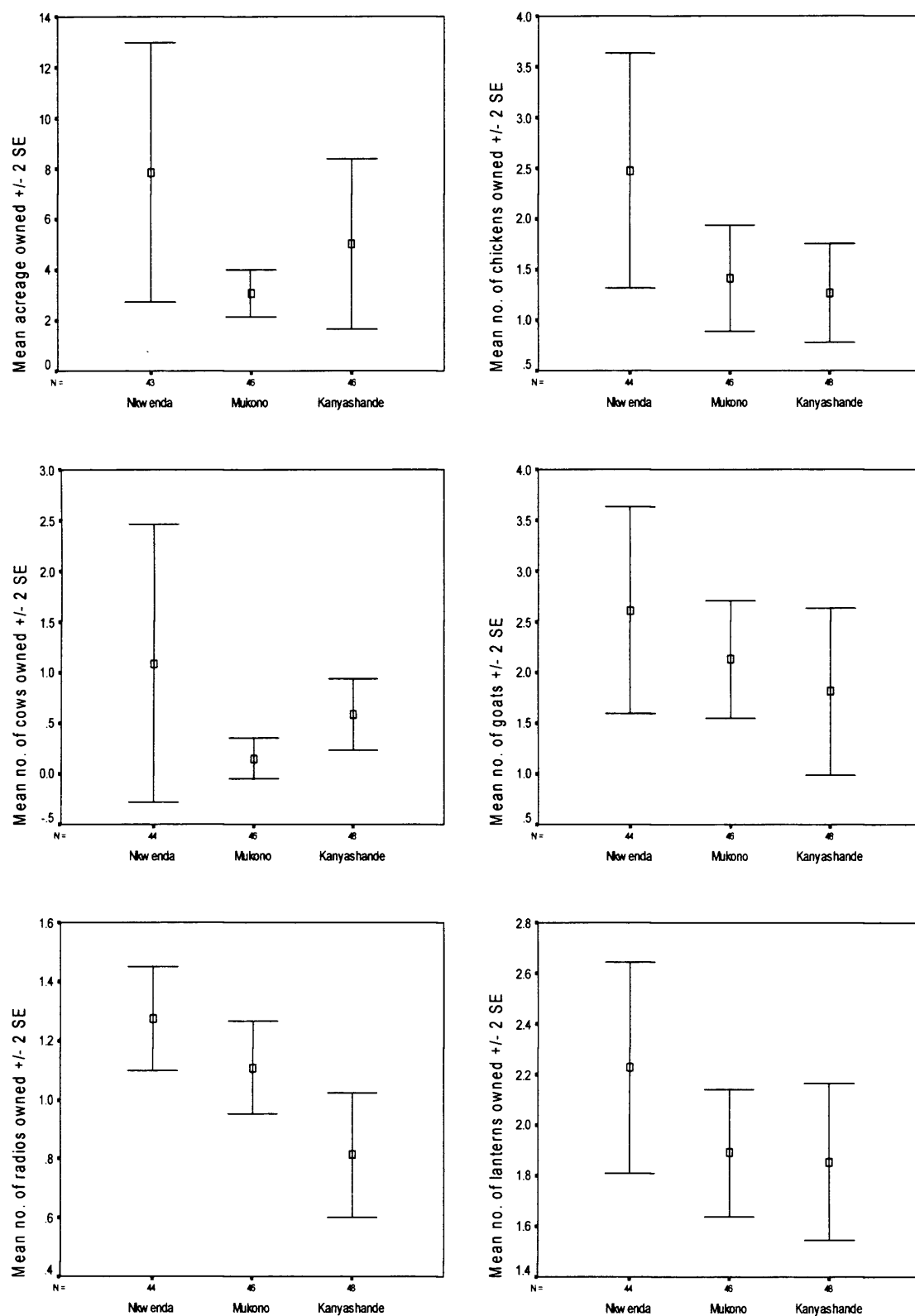


Figure 5.2: Error bar plots showing the mean number of various assets owned by household in each of the three IDHS villages

5.4.1.2 Wealth ranking

PWR exercises were completed in Nkwenda, Mukono and Kanyashande villages. The respondents in Nkwenda identified three separate wealth ranks in their village, whereas the respondents in the other two exercises identified four wealth ranks. Many factors were consistently considered important determinants of wealth by the respondents, particularly the land, livestock and assets owned by each household, the quality of housing, the ability to pay school fees for children, and employment status. Full details of the criteria identified for each wealth category in each ranking exercise are given in Appendix E.

Statistical analysis demonstrated that after the middle ranks of Mukono and Kanyashande villages had been combined (so that all villages had 3 ranks), the resulting wealth ranks were consistent across villages with respect to livestock and material asset ownership, both of which had been highly important determinants of household wealth status in all of the ranking exercises (Appendix E, Section E.2). When combined with the qualitative similarities between the rank definitions across villages, this result was considered sufficiently convincing to allow ranks to be pooled across villages. As a result each household in Nkwenda, Mukono and Kanyashande was given a rank of 1, 2 or 3 (Figure 5.3) for use in the GLMM analysis, with 1 representing the wealthiest rank.

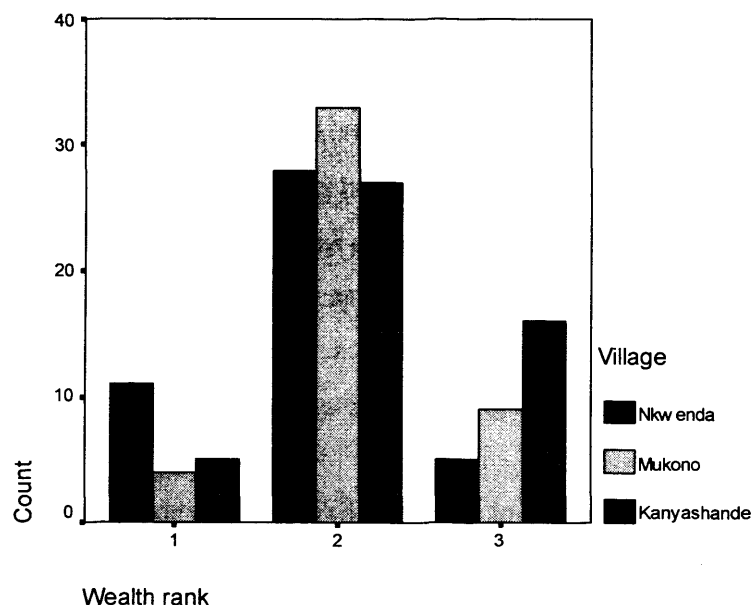


Figure 5.3: Frequency bar chart showing the number of households in each wealth rank across villages after pooling

5.4.2 Benefits from different sectors of the tourism industry

5.4.2.1 UWA

5.4.2.1.1 Employment with the BINP tourism department

At the time of fieldwork, the UWA tourism department in Buhoma employed a total of 19 people born inside the study area. Of these, 6 were tourist guides (from a total of 11), and 13 were trackers. All of these individuals were men. Other jobs in the tourism department which were not filled by local people included the Warden of Tourism who headed the department, and 2 information clerks. Several other local individuals were employed as rangers in the park, but these were not members of the tourism department.

Gorilla-tracking guides received a monthly salary of around 160,000 USh, from which was deducted 60,000 USh per year in tax³³. They also received free medical care for themselves and their immediate family, free uniforms for work, and a meals ration worth 25,000 USh per calendar month. A major additional source of income for the guides was tips from tourists, particularly on the gorilla-tracking days. Tips were officially shared amongst the guide, the two trackers and the UPDF soldiers who accompanied the group (see Chapter 2), although the extent to which this happened in practice was unclear. Interviewed UWA guides claimed to receive in the region of 20,000 USh in tips per month. This was certainly a gross underestimate, probably given out of a desire to keep the true value of guiding confidential. According to the tourists interviewed in the tourist survey, the mean value of tips given to guides by each tourist was 25,251 USh. With a full group of 6 tourists, this would mean the guide receiving over 150,000 USh in one day, and in a busy month with 6 tourists per trip and around 8 days guiding in the forest, it would mean around 1.2 million USh, or roughly \$600 US. This money was probably split at least 3 ways, but still dwarfs the income the guides received from their salaries. Further to this, several guides had received valuable gifts from tourists, such as binoculars, hiking boots, and even in one case a digital camera. Clearly, being a tourist guide was a highly lucrative position.

Tourist guides required a wide range of skills in order to do their jobs. They needed good knowledge of the flora and fauna of the National Park, excellent spoken English, to be charismatic, and to be very fit and healthy. UWA also required all guides to have

³³ Several different salary figures were reported by respondents, probably due to tax being included or excluded by different respondents without this being specified

completed at least the fourth year of Secondary school (Senior 4). The Warden of Tourism said that this criterion was included to ensure that high standards were maintained within UWA, but its effect in practice was to exclude most members of the local community from any chance of becoming a guide, including many people who spoke very good English. This contributed to a sense of resentment towards UWA in the area, particularly amongst young men (see Chapter 6 for a full discussion of local attitudes towards UWA). The guides had mostly arrived at the job after having held other positions within UWA beforehand, commonly as trackers. Several had also been working as porters to gain experience before they became employed (see section 5.4.2.5 below).

Trackers were paid a salary of around 150,000 USh per month, and they also received health care, clothing and food benefits. They did receive tips, but these were worth less than those received by guides, due to the fact that they were typically paid directly to the guides, so the trackers relied on sharing to receive anything. The skills required by trackers were much more basic than those needed by the guides. They simply had to be physically fit, able to operate a GPS unit (used to find the gorillas previous known location) and good at gorilla-tracking. They were not required to have any particular level of educational attainment. Several of the trackers had been in the job for many years, and several others had gone on to become guides.

The final decision as to who was awarded a job within the tourism department of UWA fell to the Warden of Tourism, who was therefore a very powerful man within the study area. At the time of fieldwork he was not a local, and this was not surprising as at warden level UWA had a policy of rotating staff between all their parks nationwide. The Warden of Tourism lived in UWA senior staff accommodation at headquarters, and had minimal direct contact with the community at large outside the park, so it seemed unlikely that personal relationships influenced his recruitment decisions. Rather, UWA appeared to be operating as a reasonably meritocratic employer, selecting staff on the basis of their experience and skills rather than who they knew. This said, there was a clear spatial bias in employment opportunities, as most of the staff in the tourism department were from the study area, with very few from the wider BINP-AP.

5.4.2.1.2 Revenue sharing from UWA

As discussed in Chapter 2, UWA operated a Tourism Revenue Sharing (TRS) scheme designed to bring benefits to the entire BINP-AP. Within the study area, two projects which had been supported by the scheme were identified. First, the roof of the Bwindi Community Health Centre (BCHC) was partly funded by the scheme. Second, a road between Mukono village and Kanyashande village which was under construction during fieldwork was partly funded. The exact value of the funding given in both cases could not be ascertained. The benefits of the support to BCHC were considerable. BCHC offered good quality western healthcare to anybody who could afford to pay for it, and to the Batwa for free (see Chapter 4). The support given by the TRS to BCHC was therefore of some good to most of the community, although some of the very poorest Bakiga families could not access it as they had no money to pay for medicines. The benefits of the road project were less clear, because it appeared to have stalled completely at the time of fieldwork. No work was done on it at all during 2004, suggesting that it may have been abandoned. In summary, the UWA revenue sharing scheme offered some support to projects which delivered community wide benefits in the study area, but these benefits were not in fact available to everybody, and the support was limited in value.

5.4.2.2 The Community Walk

Since beginning in late 2002, the Community Walk became increasingly successful, to the point that by mid-2004 it was attracting over 100 visitors each month. This generated quite considerable income for the beneficiaries of the walk (see Chapter 2 for details of revenue distribution). To give an example, in August 2004 the walk took a total of 1,690,000 USh (about \$845 US) from ticket sales. This was disbursed as 202,800 USh to the Batwa, 52,580 USh to each of the site owners on the walk, 84,500 USh to each walk guide and the walk co-ordinator, and the remaining 338,000 USh to BCRC. In addition, substantial funds were generated through donations made by tourists along the walk. This was particularly true of the visits to the Mukono Parents' Primary School and the Batwa settlement, at which several tourists were reported to have made substantial cash donations. In one case, before fieldwork began, a tourist paid for an entirely new school building to be constructed.

The guides on the walk received all their pay as a proportion of the walk takings. They also augmented their income with tips from tourists. These were not of the same value as those

paid to the UWA gorilla tracking guides, but still certainly exceeded their formal income from guiding. Like the UWA guides, the walk guides needed to speak English very well, to be charismatic, and to be somewhat fit and healthy for the walk itself. During fieldwork there were six guides employed, and each led a walk around 4 or 5 times a month, with some fluctuations depending on the busyness of the season. Most of the guides had completed Senior 4, and all had some form of previous experience in tourism, such as portering in the park, working for a tour camp, or guiding bird-watching walks. The process by which new positions were filled was complex, requiring applicants to submit a CV and covering letter along with a reference from their home village council (LC1) chairperson. Applications were then considered by the walk co-ordinator and senior management of the BCRC. This process was designed to ensure accountability, although the individuals making the final decisions about awarding jobs were all local, and I spoke to several people who felt their unsuccessful applications had been due to the decision makers favouring their own friends or family.

How the sites to be visited by the walk (and hence the local beneficiaries) were selected was unclear, but it was said to have involved the consultants working for FAO and MBIFCT who provided most of the funding for the project. It was also unclear whether or not there was any mechanism for rotating the beneficiaries over time. Several of the current owners of the sites were well-off members of the local community who were already well placed prior to the walk being established. For example, one was an LC1 chairperson, and another an absentee landlord who was away studying for a degree in Kampala. These individuals may have become involved simply because they owned the right land to suit the needs of the walk as a tourism product, but it seems likely that their power and influence within the community played some part. This opinion was supported by conversations with several other landowners who felt that they could have benefited, but did not know the right people or were members of the wrong clan.

5.4.2.3 The tour camps

5.4.2.3.1 Employment of local people

The seven tour camps in the study area employed a total of 67 full time staff. Of these, 40 were born in the study area, and 6 were women. The overwhelming majority of the jobs held by local people were low skilled positions such as room attendants and maintenance

staff. Five local people were employed as waiters or barmen. The only local people in management positions were the senior staff of BCRC (as required by its constitution), and the manager of the African Pearl Safaris camp. The camps also employed a variety of casual labourers on a day to day basis, but these were not analysed here as it was too complicated to establish who was being employed and how much they were paid.

The jobs performed and pay received by camp staff in each position were very similar across tour camps. Staff were always paid monthly, with the most menial jobs (such as cutting the grass) being paid in the region of 60,000 – 100,000 USh per month and more skilled staff (such as waiters and chefs) being paid 80,000 – 140,000 USh per month. The few local people employed as managers were paid substantially more than this per month, but the exact figures cannot be given because the camps asked for them to be kept confidential. Many of the local staff were able to access tips from tourists. Typically these could be paid directly to the member of staff, or left in a tip box for distribution amongst all employees. This system resulted in employees who dealt with tourists directly (such as waiters or those giving post-gorilla-tracking massages at the high-end camps) receiving much greater sums in tips than other staff. In general the non-local camps (which were more expensive for tourists) paid better wages than the locally owned camps, and their staff earned more in tips from their wealthy clients.

The camp staff required a variety of different skills, depending on the jobs they were doing. Many of the local staff in low-skilled roles required nothing more than physical fitness. Others needed some moderate skill in local cooking (staff chefs), or washing clothes and linen (room attendants). Bar staff and waiters needed excellent spoken English, and tended to be rather well educated (around Senior 4 level). Chefs and management staff needed more specific skills. Most of the chefs had specialist diplomas in cooking and were at least Senior 4 graduates. The manager and accountant of BCRC both held accountancy diplomas and had completed Senior 6. The manager of APS had completed Senior 4, and had many years experience in tourism as a porter and subsequently in various positions he had held with APS before reaching the level of manager.

Several factors appeared to be constraining access to jobs in tourism for local people. To begin with, many of the higher ranking jobs required skills which very few local people had,

meaning that non-local immigrants had to be brought in to fill them. This was particularly true of the higher-end camps (which were all non-locally owned), which needed to provide luxury standards of service for their clients. When considering the jobs which local people were able to fill, two separate factors seemed to determine access; first the relevant skills the candidate had, and second their personal relationship with the employer. The balance which was struck between these two factors appeared to differ between the non-locally owned camps and the locally owned camps. The non-locally owned camps (with the exception of APS) were all run by immigrants who had minimal vested interests in the area, or links to particular local people. As a result, when making appointments to important positions, the managers appeared to do so on the basis of the skills of applicants alone. When appointing to menial positions which anybody could do, they often employed individuals recommended by their existing members of staff, meaning that these people were able to facilitate the recruitment of friends and relatives. By contrast, the management teams of the locally owned camps were mostly local themselves, and therefore had strong ties to many people in the area. At these camps social networks appeared to play a considerable role in appointments at every level. To counter such nepotism, BCRC had strictly defined regulations designed to ensure that staff were regularly changed and appointed according to merit alone. These seemed to be fairly effective. However, some respondents complained that BCRC staff had been in their jobs longer than their allotted time (usually three years), and that there were irregularities in the elections of board members. Overall, it was clear that both skills and social networks were important, with skills more important to the higher-end camps and personal relationships to the lower-end camps.

5.4.2.3.2 Procurement in the study area

As was revealed by the leakage results presented in Chapter 4, tour camps in the study area did not spend much money on purchasing goods locally. Instead, they imported most of what they needed from external markets in Kampala (12 hours by road), Kabale (4 hours by road), or Butogota (30 mins by road). The main purchases which the camps made in the study area were perishable food products, which they usually bought from the weekly market in Buhoma village centre, and eucalyptus wood for either firewood or construction timbers, which were bought directly from the owners of woodlots. The amount of money which local growers could make selling their products to the tour camps was fairly low,

particularly because very few local farmers grew crops which were suitable for use in tourists' food. Often, the only food the tour camps bought locally was fruit and that which they used to feed their own staff. Individual sellers of food and eucalyptus products might hope to make a few tens of thousands of shillings in a season at best from the tour camp business. Access to this market was determined solely by the ability of the grower to produce enough food to have some left over for sale, and their ability to transport it to market. This excluded the very poorest and more distant farmers, but still gave a lot of local people otherwise unable to engage in tourism (such as through employment) the chance to earn some useful income.

Whenever products more desirable to the tour camps, such as chickens, became available locally, they tended to be rapidly purchased by the camps. This contributed to a general increase in the price of many market goods, a phenomenon discussed in more detail in Chapter 6.

5.4.2.3.3 Revenue sharing by BCRC

Beyond the employment of staff and the purchase of goods the local impact of most of the tour camps was minimal. However, BCRC, with its constitutional aim of supporting development projects in Mukono parish (see Chapter 2 for details), did a great deal. In theory 10% of all revenues to the campground were to be put aside for local development projects, and this corresponded to an estimated 9,490,000 USh (about \$4,750 US) during the study year (using revenue estimates from Chapter 4). This money was enough to be locally significant, and over the few years prior to fieldwork, BCRC had supported numerous local projects, including the community walk, BCHC, local schools, the Womens' group, and the new gravity water project. In many of these cases BCRC provided part or matching funding which was then augmented by an external institution. The impact of the support provided for these projects was very considerable in the study area, and was of wide benefit to the study population. Indeed, local people often showed tremendous pride in the camp, declaring that they were the owners of it and that it was benefiting everybody in the parish (see the following chapter for more discussion of local attitudes to tourism).

5.4.2.4 Other tourism businesses

A number of other small businesses related to tourism were found to be in operation. The majority of these were craft shops, but there were also several small local restaurants and motorbike taxis ('boda bodas') which were occasionally used by tourists. One of the craft shops was owned by a tour driver from Kampala, but the rest were owned by local people from the study area, several of whom also had other employment in tourism, such as with UWA. Most of the shops had a female shop-assistant whose job it was to sell the crafts to tourists. They needed to speak reasonable English and have some sales skills. They were not well paid, earning something in the region of 2,000 US\$ per day, or a commission on sales in some cases.

The origins of the crafts on sale in the shops were rather complicated. The story portrayed to tourists was that all the crafts were manufactured in the area, but this was clearly untrue. Many of the trinkets on sale were made of soapstone or other materials which were unavailable locally, and a range of clothes were also sold which were definitely not produced in the study area. The locally manufactured items were almost all wooden carvings of gorillas and woven baskets, mats and bowls made from papyrus reeds. The wooden carvings were all made by young men. They all had some form of training in their craft, and all were local apart from one who came from Kampala. They were full time workers in the handicraft industry, and they derived all of their income from selling their products to the shops. This was not substantial, and they regularly complained of a lack of business and sales. In contrast, woven products were all produced by women, none of whom made them full-time. Rather, most items were made in the evenings after the completion of their other daily tasks. Many of the producers were members of the Women's group (see below), and they sold their produce to the shops for a small fee, to be sold on for a profit. Income generated through this activity was very small, normally in the region of 5,000 US\$ over a few months. Indeed, there seemed to be a general surplus of craft shops and crafts for sale when compared to the relatively small number of tourists in the area.

Looking to other tourism businesses, employees in local bars and restaurants occasionally frequented by tourists were paid in the region of 1,500 US\$ per day. Drivers of taxi motorbikes ('boda bodas') could expect to make a few thousand shillings in profit from

driving tourists from Buhoma central to the park gate, or sometimes from the tour camps all the way to Butogota (a journey of 17 km) if they were lucky. Around 5 young men were boda boda drivers in the area. One man from just outside the study area drove a pick-up truck to and from the market in Butogota on Fridays, and all the way to Kabale once a week. He regularly managed to pick up tourists to make the journey, and they would pay as much as 20,000 USh to go to Butogota. Many local people used the back of the truck as a taxi when it was carrying tourists, and although they still had to pay, the fact that vehicles were running to town improved market access for some people who would otherwise be unable to make the journey.

5.4.2.5 Membership organisations linked to tourism

A large number of people benefited from the three main groups in the area which were linked to tourism. These were the Orphans' group, the Porters' group and the Women's group, which will be considered in turn.

The Orphans' group had about 150 members, of whom 110 lived within the study area. In theory there were several benefits of membership. First, members could earn income from selling crafts to tourists after cultural performances. Second, they could become sponsored by tourists, giving them free education and other potential benefits. Third, they were given training in skills such as farming and handicraft making. In practice, benefits from these three sources were not as substantial as they might have been. The crafts sold by Orphans' group members were almost all manufactured by other people, and the children only received a small commission for each sale. Money from sponsors which reached the children was much less than was promised or went missing entirely, and the training members received in other skills was minimal. As a result, although still significant to the children, the benefits of group membership were much less than tourists were led to believe.

The members of the Orphans group ranged in age from young children of 4 or 5 up to young adults in their late teens. Not all were orphans. Whilst some were 'double' orphans, with no parents at all, others were 'single' orphans with one living parent, and a significant minority had both parents. The official explanation for this was that the members were selected on the basis of their level of need, and that some were brought in because they were exceptionally good at dancing or craft producing, which helped out all the other

members of the group. There may have been some truth in this explanation, but it also seemed that some non-orphans had gained access to the group through personal connections with the management. Despite some of the limitations mentioned above, becoming a member of the group was considered highly desirable, and a number of people complained to me about the exclusion of themselves or their relatives. Tourists were not informed that some group members were not orphans, or that some crafts were not made by group members.

The Porters' group was a successful organisation which seemed to operate well. Members of the group had the chance to enter the forest about two to four times per month depending on the season. They received the 10,000 US\$ fee charged to tourists, plus whatever tip tourists wished to give them. These were often considerable and would normally be worth more than the fee itself. After reporting to the NP every morning the porters not tracking were free to leave, so portering gave them an additional chance to earn income without compromising their ability to carry on with other tasks. However, the requirement to register at the NP headquarters every day did limit access to portering to those living close to the park gate. Portering was also a good route into more formal employment, particularly with UWA. Most of the 36 group members were young men, but there were also 3 female members. Membership of the group was strictly limited, and there was a long list of people keen to enter it. The application process appeared to generally operate according to the official procedure given in Chapter 2, although the group co-ordinator may have had more influence than was publicly declared.

Membership of the Bwindi Progressive Women's Group (BPWG) was less valuable than membership of the Orphans' or Porters' groups. There were many members who made crafts at home in the evenings, but sales were slow, meaning that returns for members were small. As mentioned above, many of them ended up selling their crafts through other shops, but this also brought minimal income. Joining the group was easy for women in the study area, and it had a large membership. Access to it was controlled by several co-ordinators, but as it was not size limited there appeared to be little conflict over membership (although there was considerable conflict over control of the group and the direction it was taking). As a result, the group included many people who were excluded from other sectors of the

tourism industry due to a lack of marketable skills. However, the returns were very small, typically being just a few thousand shillings each year.

5.4.3 Quantitative factors explaining overall engagement in tourism

The total number of people found to be directly engaged in tourism by the baseline household survey was 393, or 13.9% of the 2821 individuals sampled (including babies and the very old). These 393 people were drawn from 238 households, or 40.1% of the 593 households surveyed. The most individuals engaged in tourism from a single household was 8 (Figure 5.4).

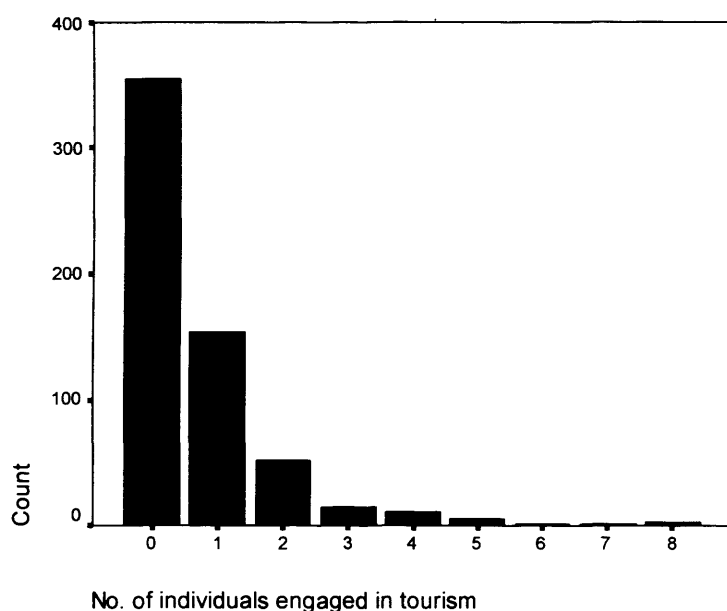


Figure 5.4: Frequency histogram showing the number of individuals per household engaged in tourism

The restricted sample used for GLMM analysis (see Section 5.3.4) contained a total of 684 individuals, of whom 163 (23.8%) were engaged in tourism³⁴. The Minimum Adequate Model is given in Table 5.4. The model shows that younger people, men, those living closer to the park gate and those in richer wealth ranks were more likely to be involved in tourism. The significant interaction term also shows that as age increased, the proportion of men involved in tourism decreased.

³⁴ The reason this proportion was considerably larger than that for the entire sample is that the GLMM sample was restricted to adults who were more likely than young children to be engaged in tourism.

Table 5.4: Minimal Adequate GLMM of tourism engagement. Only explanatory variables which significantly improved the minimal model are reported. AIC = 350.404

Term	Coefficient	Df	χ^2	p
Age	- 0.052	2	83.591	< 0.001
Gender	- 6.499	2	190.120	< 0.001
Distance	- 0.0002	1	5.352	0.021
Wealth rank	- 1.880	2	11.350	0.003
Age x gender	0.098	1	83.073	< 0.001

The mean number of years of education completed was significantly higher for individuals engaged in tourism than individuals not engaged in tourism ($t = -7.098$, $df = 682$, $p = < 0.001$; Figure 5.5).

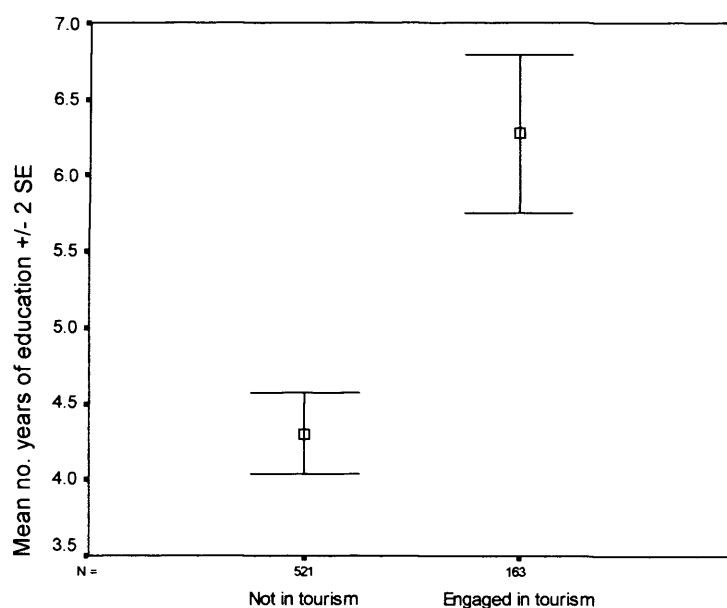


Figure 5.5: Mean number of years education completed for individuals involved in tourism and not involved in tourism

Individuals with other household members involved in tourism were significantly more likely to be involved in tourism themselves than individuals with no other household member involved in tourism ($\chi^2 = 11.312$, $df = 1$, $p < 0.001$; Table 5.5).

Table 5.5: Observed, expected and total number of individuals engaged in tourism against other household members engaged in tourism

			Other household member in tourism?		Total
			No	Yes	
Focal individual in tourism?	No	Observed	365.0	156.0	521
		Expected	347.3	173.7	
	Yes	Observed	91.0	72.0	163
		Expected	108.7	54.3	
			Total	456	228

5.4.4 Quantitative factors determining engagement in different tourism activities

5.4.4.1 The handicraft industry

The total number of people found to be engaged in the handicraft industry in the baseline survey was 220, or 7.8% of the 2821 individuals sampled. These people were drawn from 125 (21.1%) of the households surveyed.

Before GLMM analysis could be carried out (using the restricted sample), individuals from the Bagusi, Basoga and Bagongo clans were removed because there was no variation in the response variable for these clans. This left 677 individuals for analysis, of whom 54 (8.0%) were engaged in the handicraft industry. All the individual explanatory variables used for the overall analysis were included in the maximal GLMM (age, gender, clan, distance and wealth), but the interaction terms had to be removed, because the models could not converge when they were included. The MAM for handicraft engagement is given in Table 5.6. The model demonstrates that older people, women and those in richer wealth ranked households were more likely to be involved in the handicraft industry.

Table 5.6: Minimal Adequate GLMM of engagement in handicrafts. Only explanatory variables which significantly improved the minimal model are reported. AIC = 324.106

Term	Coefficient	Df	χ^2	p
Age	0.0246	1	6.883	0.009
Gender	2.867	1	47.626	< 0.001
Wealth rank	- 0.922	1	13.659	< 0.001

Individuals engaged in the handicraft industry had on average fewer years of education than individuals not engaged in the handicraft industry, but the difference was not significant ($t = 1.311$, $df = 674$, $p = 0.190$; Figure 5.6).

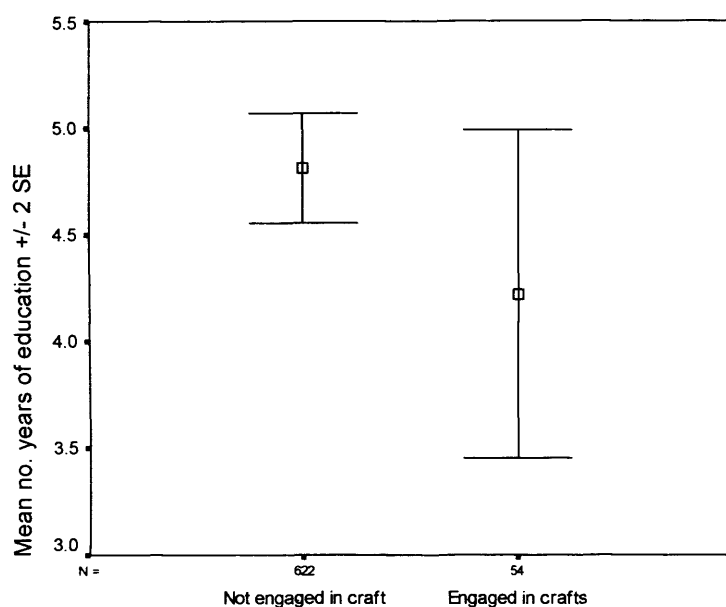


Figure 5.6: Mean number of years education completed for individuals involved in handicrafts and not involved in handicrafts

Individuals with other household members involved in tourism were significantly more likely to be involved in the handicraft industry themselves than individuals with no other household member involved in tourism ($\chi^2 = 25.972$, $df = 1$, $p = < 0.001$; Table 5.7).

Table 5.7: Observed, expected and total number of individuals involved in the handicraft industry where the focal individual does or does not have a fellow household member involved in tourism

			Other household member in tourism?		Total
			No	Yes	
Focal individual in handicrafts?	No	Observed	432.0	191.0	623
		Expected	415.1	207.9	
	Yes	Observed	19.0	35.0	54
		Expected	35.9	18.1	
			Total	451	226

5.4.4.2 Full time employment in the tourism industry

The total number of people found to be employed in the tourism industry in the baseline survey was 106, or 3.8% of the 2821 individuals sampled. These people were drawn from 100 (16.9 %) of the households surveyed.

As for the analysis of handicrafts, individuals from the Bagusi, Basoga and Bagongo clans were removed prior to GLMM analysis because there was no variation in the response variable for these clans. This left 677 individuals for analysis, of whom 63 (9.2%) were employed in the tourism industry. The maximal model could not converge when ‘wealth rank’ was included as a term, because of a lack of variation in the response variable for the lowest wealth rank. As a result wealth rank was dropped from the GLMM for separate analysis (see below). All the other individual explanatory variables used for the overall analysis were included in the new maximal GLMM (age, gender, clan and distance), but again the interaction terms were dropped to avoid over-parameterising the model. The MAM for employment is given in Table 5.8. The model demonstrates that younger people, men and those living closer to the park gate were more likely to be formally employed in the tourism industry.

Table 5.8: Minimal Adequate GLMM of formal employment in tourism. Only explanatory variables which significantly improved the minimal model are reported. Clan was not significant. AIC = 316.551

Term	Coefficient	<i>df</i>	χ^2	<i>p</i>
Age	- 0.0268	1	5.659	0.017
Gender	- 3.2211	1	76.434	< 0.001
Distance	- 0.0005	1	24.371	< 0.001

The mean number of years of education completed was significantly higher for individuals employed in tourism than individuals not employed in tourism ($t = -9.762$, $df = 672$, $p = < 0.001$; Figure 5.7).

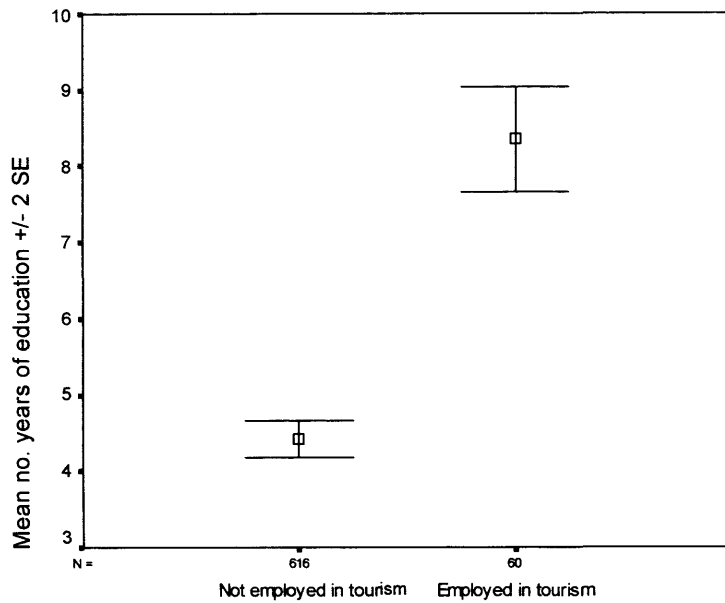


Figure 5.7: Mean no. of years education completed (+/- 2SE) for individuals employed in tourism and not employed in tourism

Individuals with other household members involved in tourism were not significantly more likely to be formally employed in tourism than individuals with no other household member involved in tourism ($\chi^2 = 0.092$, $df = 1$, $p = 0.761$; Table 5.9).

Table 5.9: Observed, expected and total number of individuals employed in tourism where the focal individual does or does not have a fellow household member involved in tourism

			Other household member in tourism?		Total
			No	Yes	
Focal individual employed in tourism?	No	Observed	410.0	207.0	617
		Expected	411.1	205.9	
	Yes	Observed	41.0	19.0	60
		Expected	39.9	20.1	
Total			451	226	677

The distribution of employment in tourism across wealth ranks was significantly different from that expected by chance, with the great majority of employed individuals belonging to the richest two wealth ranks ($\chi^2 = 30.191$, $df = 2$, $p < 0.001$; Table 5.10).

Table 5.10: Observed, expected and total number of individuals employed in tourism by the wealth rank of their household

			Wealth rank			Total	
			1	2	3		
Focal individual employed in tourism?	No	Observed	110.0	395.0	112.0	617	
		Expected	124.9	389.1	103.0		
	Yes	Observed	27.0	32.0	1.0	60	
		Expected	12.1	37.9	10.0		
	Total			137	427	113	677

5.4.5 Tourism as a component of local livelihood portfolios

Households with at least one member engaged in tourism owned on average significantly more goats than households with no individual involved in tourism (Table 5.11). There were no significant differences in any other of the other sources or potential sources of household income tested (Table 5.11).

Table 5.11: Comparison of non-tourism sources of income for households with a member engaged in tourism and those with no members engaged in tourism

Source of income	Household member engaged in tourism?	N	Mean	<i>t</i>	<i>df</i>	<i>p</i>
Income from tea (US\$ last quarter)	Yes	60	39,258	- 0.672	136	0.503
	No	78	30,808			
Area farmed (acres)	Yes	59	5.89	- 0.735	133	0.464
	No	76	4.46			
No. of cows owned	Yes	60	1.03	- 1.653	136	0.101
	No	78	0.27			
No. of chickens owned	Yes	60	2.15	- 1.756	136	0.081
	No	78	1.36			
No. of pigs owned	Yes	60	0.43	1.238	136	0.218
	No	78	0.65			
No. of goats owned	Yes	60	2.98	- 3.091	136	0.002
	No	78	1.55			

Data relevant to how tourism fitted into local livelihoods are given in several places during the discussion of different tourism sectors in Section 5.4.2 above. This information is not repeated here, but is drawn upon when discussing this issue in Section 5.5.4 below.

5.5 Discussion

5.5.1 *Wealth and the distribution of assets*

The distribution of assets across households in the study area was highly skewed. In most cases a very small number of households owned a large number of assets, whilst the majority of households owned very few. This finding was further supported by the results of the wealth ranking exercises. Very few households were placed in the top wealth rank, but membership of that rank in all three villages assessed required large holdings of land and livestock, good quality housing and the ability to educate one's children to secondary level. These results are not surprising. It is common to find strong wealth inequality in rural areas of developing countries (e.g. North & Cameron, 2000), and particularly so in strongly hierarchical societies such as the Bakiga (Ngologoza, 1998). As well as inter-household inequality, some evidence was found for inter-village inequality in asset distribution. Households in Nkwenda village consistently owned more assets on average than those in other villages, although only radio ownership differed significantly across the study villages. The suggestion that Nkwenda might be richer is interesting, because most of the tourism businesses in the study area were located there. This implies that distance from the park might be an important determinant of access to tourism benefits, an issue discussed in more detail in Section 5.5.3.3 below.

The skewed distribution of assets between households and between villages in the study area demonstrates the importance of disaggregating population level analysis. Chapter 4 showed that the study area was cash-rich compared to other areas around BINP, and showed signs of socioeconomic change at the population level. However, with wealth so heavily skewed, it is possible that most tourism benefits were actually being captured by a small number of households, changing population level measures but affecting very few people. This issue is considered in the following two sections, which examine the flow of tourism benefits from different sectors of the industry, and the factors constraining access to these benefits for local people.

5.5.2 *Benefits from different sectors of the tourism industry*

Different sectors of the tourism industry in the study area were found to vary enormously in the benefits they delivered for the study population, and who was able to access them. These issues are discussed in the following paragraphs, first considering indirect benefits of

tourism (through revenue sharing), and second some of the direct benefits (through employment and the sale of goods and services).

Indirect benefits of tourism were delivered to the study population through the Tourism Revenue Sharing (TRS) scheme operated by UWA, through revenue sharing by BCRC, and to some extent by the Community Walk. These benefits provided fewer income-generating opportunities than the direct benefits of tourism discussed below. The effectiveness of the TRS in particular appeared to be limited by the small amount of revenue generated for it per tourist (see Chapter 2), and by institutional problems hampering the disbursement of funds. These problems are consistent with those found five years before this study by Archabald & Naughton-Treves (2001). However, the indirect benefits of tourism did contribute to improvements in the physical and human capital of local households (through investment in schools, hospitals and infrastructure), areas which were not affected by direct impacts of tourism. In this way the indirect and direct benefits of tourism were somewhat complementary. In addition, indirect benefits were accessible to almost everybody in the study area, particularly where investment had been made in roads and the new gravity water scheme. The extent to which indirect benefits of tourism were perceived by local people and/or recognised as impacts of tourism are discussed in Chapter 6.

Direct benefits of tourism were found to be delivered by several different sectors of the industry. These were UWA, the Community Walk, the tour camps, other tourism businesses and all of the groups which were involved in tourism. However, the value of benefits from these sectors varied a great deal. By far the most lucrative form of engagement was employment. This finding is consistent with what has been reported elsewhere (Mansperger, 1995; Ashley *et al.*, 2001). The greatest number of jobs for local people were provided by the tour camps, followed by UWA. The most lucrative jobs of all were those giving access to tourists, because tourists often gave large tips. Direct benefits other than employment were found to be much less lucrative. The sale of crafts through groups gave minimal returns, and members of the Porters' group were the only people not formally employed who could expect to make good money, because of their ability to access tips.

Direct benefits of tourism reached a large number of people and households in the study area. Nearly 15% of the entire population was engaged in tourism in some way, and over 40% of households. This is a remarkable level of engagement in the industry, particularly for tourism in a rural area of a developing country (Scheyvens, 2002b). Characteristics of the study area which may have made conditions for local engagement unusually favourable are discussed in Chapter 9. Of the individuals engaged in tourism, over half were involved in the handicrafts industry in some way, either through manufacture, sale, or membership of the BPWG or Orphans' group. Engagement in the handicrafts industry was not highly lucrative, but clearly it reached a lot of people. Just 1.3% of the total study population were employed in tourism, but these individuals came from nearly 17% of households, meaning that the considerable returns available to employed individuals reached nearly one in five study households. The benefits of tourism may have reached a surprisingly large number of households, but access to the benefits was still found to be constrained by a number of factors. These are discussed in the following section.

5.5.3 Factors constraining access to benefits

A wide range of factors combined to constrain or facilitate individual access to benefits from the tourism industry, and these constraints were not the same for different tourism activities. For ease of comparison, the different factors found to be significant during statistical analysis are summarised in Table 5.12, after which the importance of each factor and possible explanations for its role are discussed in more detail.

Table 5.12: The constraints on access to overall engagement and specific activities within the tourism industry. The individual characteristic found to significantly favour access is given in each case.

Constraint on access	Any form of engagement	Handicrafts	Employment
Age	Younger people	Older people	Younger people
Gender	Men	Women	Men
Distance from park	Close	-----	Close
Education	More educated people	-----	More educated people
Wealth rank	Richer people	Richer people	Richer people
Household members in the industry?	Those living with people in the industry	Those living with people in the industry	-----

5.5.3.1 Age

Consistent with findings elsewhere (e.g. Liu & Wall, 2006), younger people were more likely to be engaged in the tourism industry overall. This was probably due to the fact that many of the tourism based activities which local people carried out required considerable physical strength and/or fitness, making them inaccessible to older and less healthy people. Further to this, many also required a high level of education, and as explained in Section 5.3.4, age and education were highly correlated in the study population, with younger people tending to be more educated and therefore better able to access these activities. By contrast, older people were more likely to be involved in the handicraft industry. This could be due to the cottage-industry nature of craft production, with most crafts being made at home by older women in the evenings.

5.5.3.2 Gender

The tourism industry is notorious for gender division of labour, with opportunities for women usually severely limited (Sinclair, 1997). This was reflected in the study area, where men were more likely to be engaged in tourism overall, and to have jobs in the industry. Positions held by men were also more lucrative, with all well paid positions such as park trackers and guides being held by men. In contrast, poorly paid roles such as working as room attendants, laundry staff and craft producers were mostly held by women. Women did dominate handicraft production, but again the returns from this activity were very small. There were some encouraging signs of increasing opportunities for women, evidenced by the small number of female porters, and the female manager of BVC. However, it remained clear that gender was a highly significant constraint on access to different sectors of the industry. There was a significant interaction between age and gender in the analysis of overall engagement in tourism. This supports the qualitative finding that most jobs were taken by young men, whereas most craft manufacture was carried out by older women, resulting in a shifting gender balance of tourism engagement with age.

One important factor which helps to explain the results found for gender is the strong gender division of labour which is found in other activities in Bakiga society. For example, it is normal for women to carry out all household chores as well as taking the lead role in agricultural work (see Chapter 2 for details of traditional local livelihoods). Men on the other hand usually carry out income generating activities, such as hunting or cutting timbers.

In this context it should not be seen as surprising that men have taken the majority of positions within the tourism industry, especially given the loss of various livelihood opportunities since the formation of the National Park. Gender is a constraint on access to tourism activities, but it would be inappropriate to blame the tourism industry alone for this situation.

5.5.3.3 Distance from the park

The distance individuals lived from the park was a constraint on overall access to tourism engagement, and to jobs in the industry. This is consistent with other studies (e.g. Briedenhann & Wickens, 2004; Jurowski & Gursoy, 2004) and can be explained on the simple grounds that it was too time consuming to walk to work for people living far away from the centre of tourism activity in Nkwenda. Individuals living outside the study area could not possibly access tourism engagement opportunities unless they stayed overnight at their place of work. Some people did this, but they were few in number. Distance was not a significant determinant of engagement in the handicrafts industry, probably because it was possible for craft producers to bring their goods to points of sale periodically rather than daily, as was necessary for anybody engaging in the tourism industry full time.

5.5.3.4 Education

Better educated people were found to be more likely to be engaged in tourism and to have jobs in tourism. This finding could be a result of the strong correlation between education and age in the study area, but the qualitative data collected strongly suggested that education was itself a constraint on access in many cases. For example, many of the full-time jobs in the industry required either very good spoken English, specific qualifications (such as catering or accountancy), or both. This is consistent with findings elsewhere. For example, Liu & Wall (2006) suggest that a major cause of tourism failing to deliver benefits to host communities is the lack of skills in the local community, and the lack of effort which is made to improve local human resources. Education was not a significant determinant of engagement in the handicrafts industry, most likely because craft production did not require formal qualifications or English speaking ability, both of which contributed to making crafts more accessible for lower-skilled members of the study population.

5.5.3.5 *Wealth*

Tourism benefits are often found to be dominated by local elites, particularly the wealthy (Scheyvens, 2002b). This held true in the study area, with richer individuals more likely to be involved in all aspects of the industry. Given the very great returns to certain forms of engagement (such as guiding), it was clear that many households became richer as a result of income from tourism. However, the extent to which wealth should be seen as a constraint on access depends on whether individuals involved in tourism accessed the industry because they were rich, or became rich because of entering the industry. This is a complex question, the answer to which depends on the specific circumstances of each household. For example, if an individual engaged in tourism by establishing a new business, such as a small tour camp, he or she must have been wealthy to begin with in order to afford the start-up capital required. In contrast, somebody beginning their career in tourism by joining the Porters' group could well be of only moderate wealth status, and might subsequently become wealthy as a result of their earnings from the industry. Households in the study area appeared to have taken both routes, although informal discussions with many local people suggested that some of the most successful tourism-engaged families at the time of fieldwork had entered the industry as a result of being better educated when tourism activities began in the area. Good education requires money, and in this way access to tourism appeared constrained by wealth.

5.5.3.5 *Social networks*

Individuals can exploit their social capital to gain access to opportunities which might otherwise be denied to them (Ellis, 2000). In the study site this could be done by taking advantage of assistance from fellow household members, fellow clan members, and friends. The qualitative investigation of tourism sectors (Section 5.4.2) identified several cases where personal relationships appeared to have played a role in accessing tourism benefits, such as achieving membership of the Orphans' group or gaining employment in locally-owned tour camps. In some cases the importance of social networks appears to have undermined opportunities for people otherwise excluded from tourism. For example, as discussed above, most of the individuals engaged in craft production were older women, suggesting that this tourism activity may have been more 'pro-poor' than others (Ashley *et al.*, 2001). However, statistical analysis demonstrates that access to the crafts industry was heavily linked to having another household member involved in tourism. Indeed, general

observations suggested that a common route into crafts sales for women was through their sons or husbands having a job with UWA or a camp, and making personal arrangements for their crafts to be sold their. Women with no such tourism-engaged relative could not exploit this social network, and remained excluded from direct tourism benefits.

The clan to which each individual belonged was included in every initial model, but was never found to be a significant determinant of engagement in tourism. However, qualitative results suggested that clan was an important constraint on access to the tourism industry. This was particularly true for the most powerful positions in the industry, such as camp managers, group co-ordinators and senior UWA guides. It is not possible to give specific examples, for reasons of confidentiality, but there were several cases where individuals from the same extended family and clan occupied a disproportionate number of important positions. From these central nodes of influence they appeared to be able to control access for many other people, and to reap enormous benefits from the industry for themselves and their families. Similar local ethnic and political institutions have been found to constrain access to tourism benefits elsewhere, such as in Belize, where Belsky (1999) found that they limited the equitable distribution of revenue, co-management of ecotourism associations and support for conservation. The effect of clan may not have been found by statistical analysis in this study because there were few nodal individuals and the analysis could not differentiate them from individuals with minor roles in the industry.

5.5.4 Tourism as a component of local livelihood portfolios

Households engaged in tourism were not found to have consistently greater income from tea or ownership of potentially income-generating assets. This was perhaps a little surprising, particularly given the link between wealth and tourism discussed above. The results offer some support for the ‘displacement’ hypothesis, in that they suggest that households engaged in tourism may have scaled back their engagement in other activities. However, as discussed above, this cannot be confirmed here as time-series data were not collected. It was interesting to note that the tourism activity which engaged the most people, handicrafts, was also the activity most easily incorporated into the livelihood portfolio. Many women carried out crafts production in the evenings when they had some free time, and used them to supplement their income. This meant that they were gaining some benefit from tourism, but were not in any way dependent on the industry. In contrast, individuals

employed in tourism had little time to do anything else themselves. Many of them used their income to employ other people to work for them, for example weeding their fields or harvesting their tea. In this way tourism revenues were able to ‘trickle-down’ to some of the poorest families in the study area. However, many of the individuals employed by tourism appeared to be dependent on the industry. This was particularly true of single young men who did not have a wife and family who could continue with other livelihood activities at home. The extent to which trickle-down benefits were recognised as flowing from tourism, and the potential costs of dependency on the industry, are considered in more detail in the following chapter.

5.6 Conclusions

Tourism benefits reached a remarkably large proportion of households within the study area. However, to conclude that every household benefited or that all benefited equally would not accurately reflect the situation on the ground. The distribution of assets within the study area was highly skewed across households, as was engagement in the tourism industry. Some households benefited spectacularly, whereas others received only scant trickle-down benefits or none at all.

The most valuable way to engage in tourism was through employment by tour camps or UWA. For those with access to tips, this could mean enormous returns in the local context. These opportunities were by no means available to everybody. Access was heavily constrained by age, gender, location, social networks, and in particular education. In contrast, less lucrative forms of engagement in tourism, such as handicraft making, appeared to be more ‘pro-poor’, because they were accessible to otherwise marginalised groups including women, older people and the less educated. However, access to these opportunities was constrained by social networks, because it was often gained through relatives with more formal engagement in the industry. Benefits from direct engagement in tourism far outweighed those from revenue sharing schemes, although these schemes did reach almost all local households, and provided some benefits which complemented those coming from direct engagement.

The way in which tourism was incorporated into local livelihood portfolios was found to vary with the type of tourism activity. Full-time engagement through employment appeared

to result in some displacement of other activities, creating opportunities for other individuals to gain benefits of tourism indirectly by being employed to work in the fields of those with jobs. In this way 'trickle-down' seemed to work quite well in the study area. However, employed individuals left themselves exposed to the risk of dependency on the industry. Less time consuming tourism activities such as craft manufacture were usually incorporated into local livelihoods, providing useful additional income without creating dependence on tourism.

Analysis of tourism impacts at the population level misses important inequalities in distribution and access to tourism benefits, and risks taking at face value local narratives intended to paint a universally positive picture for outsiders. These issues can only be revealed through long-term and in-depth research, which includes both qualitative and quantitative techniques. This chapter has made use of data collected using such techniques to demonstrate which local people were able to benefit from the industry and which were excluded, and which sectors of the industry delivered most local benefits. However, thus far only the distribution of benefits has been considered. Tourism and conservation can also bring with them substantial costs. These costs and their impacts on local attitudes are the subject of the following chapter.

Chapter 6: The costs of tourism and conservation for local people: their magnitude, distribution and influence on attitudes

6.1 Chapter summary

Under Link 1 in the theoretical framework for ecotourism, tourism is supposed to deliver benefits to the host community (Ross & Wall, 1999; Chapter 1; Figure 6.1). The framework goes on to predict that these benefits will encourage local people to adopt a more sustainable relationship with the natural resources upon which the tourism product is based, ensuring its long-term conservation (Link 2; Chapter 1; Figure 6.1). However, both tourism and conservation can bring costs to local people, and the idealised win-win outcome of ecotourism will only be realised if the benefits of tourism are equal to or greater than the costs of tourism and conservation at the individual level. This chapter investigates these issues in the study area by considering two issues. First, it details the costs of tourism and conservation for the study population, considering in both cases the severity of the costs and their distribution across individuals and households. Second, it examines the way in which the balance of perceived costs and benefits at the individual level influenced attitudes to tourism and conservation. Finally, it uses this information to draw some conclusions about the performance of tourism under Links 1 and 2 of the theoretical framework.

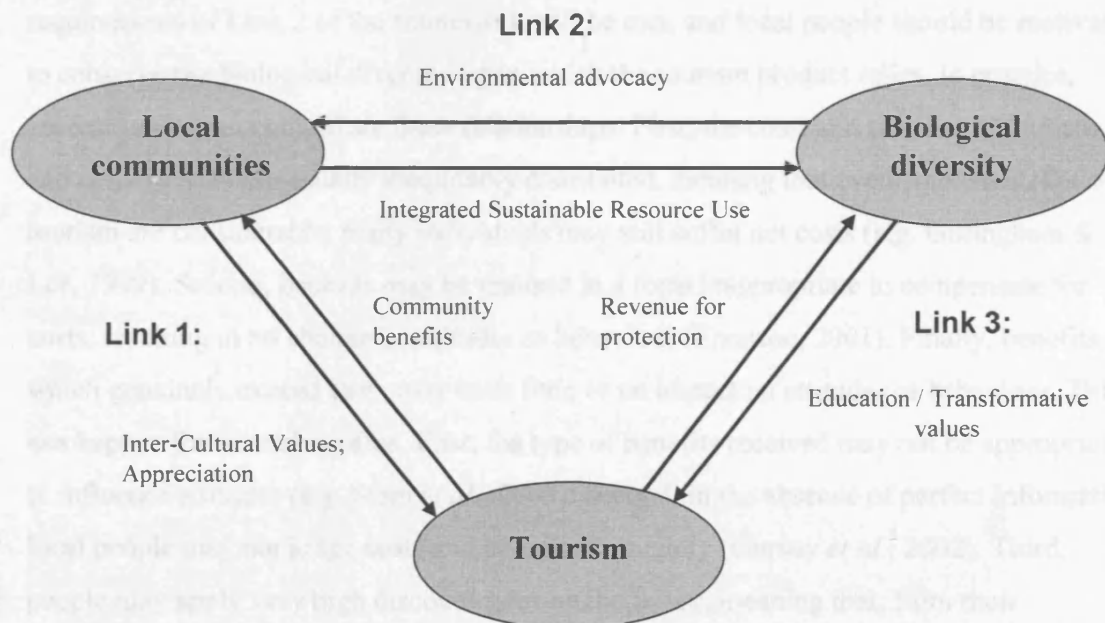


Figure 6.1: The theoretical framework for ecotourism, adapted from Ross & Wall (1999). This chapter addresses aspects of Links 1 and 2

6.2 Introduction

Tourism can bring considerable costs to host populations, and these are frequently ignored in studies of tourism impacts, most of which only consider monetary benefits (Ashley *et al.*, 2001; Chapter 1). Tourism can result in the commodification of culture (Urry, 2002), dependency (Mansperger, 1995), physical exclusion from tourism areas (Vail & Hultkrantz, 2000), increased prices of goods in local markets (Pattullo, 1996), and the spread of disease (Hill, 2000b). Conservation can also bring considerable costs for local people (Chapter 1). People can be evicted from Protected Areas (Brockington *et al.*, 2006), lose access to culturally important sites (Heinen, 1993), and suffer crop losses from raiding animals (Tweheyo *et al.*, 2005). In addition, they can suffer considerable opportunity costs of conservation where access to harvestable resources (e.g. Emerton, 1999) and land for agricultural conversion (e.g. Norton Griffiths & Southey, 1995) is prohibited. This latter cost is particularly severe in areas like south west Uganda, where agriculture is usually seen as the most likely route out of poverty (Pender, 2004).

In theory, if the benefits of tourism outweigh the costs of the industry outlined above, then the requirements of Link 1 of the ecotourism framework will be fulfilled, and local people should hold positive attitudes towards the industry. Similarly, if the benefits of tourism outweigh the combined costs of tourism and conservation outlined above, then the requirements of Link 2 of the framework will be met, and local people should be motivated to conserve the biological diversity upon which the tourism product relies. In practice, several issues can complicate these relationships. First, the costs and benefits of tourism and conservation are usually inequitably distributed, meaning that even where benefits of tourism are considerable, many individuals may still suffer net costs (e.g. Gillingham & Lee, 1999). Second, benefits may be realised in a form inappropriate to compensate for costs, resulting in no change in attitudes or behaviour (Emerton, 2001). Finally, benefits which genuinely exceed costs may have little or no impact on attitudes or behaviour. This can happen for several reasons. First, the type of benefits received may not be appropriate to influence attitudes (e.g. Stem *et al.*, 2003). Second, in the absence of perfect information, local people may not judge costs and benefits accurately (Gursoy *et al.*, 2002). Third, people may apply very high discount rates on the future, meaning that, from their perspective, long-term benefits are not sufficient to outweigh the short-term costs of conservation (Casse *et al.*, 2005). Finally, rather than substituting for other activities,

tourism activities may simply be added to local livelihood portfolios, resulting in no change in behaviour towards resources of conservation concern (Salafsky & Wollenberg, 2000; Chapter 5).

The tourism industry in the study area brought considerable benefits, as was shown by the previous two chapters. However, it also had features which are often associated with local costs, such as cultural attractions for tourists, and the industry's domination of the local economy. In addition, the study area was immediately next to BINP, and therefore well placed to suffer any costs of conservation associated with the National Park. This chapter investigates the balance between these costs and the benefits of tourism at the study area by addressing the following research aims:

1. To investigate the costs of tourism for the study population, and how they were distributed
2. To investigate the costs of conservation for the study population, and how they were distributed
3. To investigate how local people perceived the balance between the costs and benefits of tourism, and how this affected their attitudes towards the industry
4. To investigate how local people perceived the balance between the benefits of tourism and the combined costs of tourism and conservation, and how this affected their attitudes towards BINP

6.3 Methods

6.3.1 Source data

This chapter makes use of data collected from the IDHS, semi-structured interviews, and unstructured conversations with local people (see Chapter 3 for further details of these methods). It also makes use of data from a market price survey. The data collection tools used for each research aim are described in turn below.

6.3.2 The costs of tourism for local people

Measuring costs of tourism is notoriously difficult, because they can be so diverse, including economic, social and environmental costs. This presents a problem when considering the methods to be used to evaluate them, because the costs found will always

reflect to some extent the methods chosen. In this study a variety of both quantitative and qualitative methods were employed in an effort to gain an understanding of as many different dimensions of cost as possible. However, it is acknowledged that there will have been other costs of tourism which were not recognised or measured by the methods employed.

To investigate economic costs of tourism, and specifically to establish whether tourism had led to local increases in market prices as have been found elsewhere, a simple survey of two local markets was carried out. One was the weekly food market in Buhoma village within the study area, which was the main market used by local people, and was also frequently used by the tour camps. The other was the weekly market in Nteko village on the south side of BINP. This market was accessible from the study area by walking through the National Park along a trail, a journey of around 3 to 4 hours. The alternative route by vehicle around BINP takes around 7 hours, and was never used by local people. Nteko market was selected because it was similar to Buhoma market in terms of its proximity to the park and distance from a major town, but differed in having no tourism near it at the time³⁵. Both markets were surveyed once during the same week in February 2004. The prices of all common items for sale in each market were ascertained by the main project Research Assistant. He was used to collect these data to prevent price inflation distorting the results, as would doubtless have happened if I had attempted to find out prices myself. Finally the price and availability of items were compared, to establish which of the markets was more expensive. It is accepted as a weakness of the data that this survey used only a very small sample and was not replicated, making statistical comparison of prices impossible.

Social and cultural costs of tourism in the study area were evaluated from a purely qualitative perspective. To gauge costs of tourism as they were perceived by local people, the IDHS included a question which asked respondents to describe any problems they felt they had suffered as a result of tourism in the area. This was part of an open-ended section of the questionnaire, giving respondents the opportunity to say whatever they liked. In some cases respondents came up with costs spontaneously, and in others they confirmed

³⁵ A new tourism development at Nkuringo, close to Nteko, has been slowly growing since 2004, but was bringing a very small number of tourists at the time of the market survey

costs following prompting in open discussion. Prompting was used with caution, and care was taken not to over-interpret responses gained after prompting. No attempt was made to use quantified attitude scores for the costs or benefits of tourism or conservation in the in-depth survey, because it was found during a pilot test of the questionnaire that respondents struggled to understand them. Using quantified scores also tended to over-structure the discussion, hiding interesting and useful points which could emerge during open conversation. Other costs of tourism in the area which were not mentioned by survey respondents were identified from general observations and conversations with people in the study area, as described in Chapter 3. Information about the possible human disease impacts of tourism was sought through discussions with the American doctor living in the area, with some of his medical staff, and with well-educated local individuals with a good understanding of the tourism industry. The possible cultural impacts of tourism were investigated by observing overt manifestations of local culture in the area (such as language, behaviour and dress) and talking to people about how they felt culture was influenced by tourism. Cultural performances were identified as a possible source of cultural costs of tourism, because other studies have found this to be the case (e.g. Kirtsoglou & Theodossopoulos, 2004; Chapter 1). To investigate this possibility numerous cultural performances by both the Batwa and Orphans' groups were observed, and both tourists and performers were interviewed to gain an understanding of how the interaction took place and its outcomes.

The relative significance of costs of tourism to different groups within the local community was considered in all cases. The IDHS was stratified to include a representative number of households from each wealth rank within the study villages, thereby ensuring that the views of a wide range of people were included in the study (see Chapter 3 for full details of the sampling strategy used). Where costs differed by subgroup, those individuals and households most vulnerable to the cost were identified through qualitative data collection.

6.3.3 The costs of conservation

The costs of conservation were determined using very similar methods to those applied to evaluate the costs of tourism. First, perceived costs were identified by asking respondents to the IDHS to describe problems which they had seen or suffered relating to the National Park and the forest. If crop-raiding was not mentioned spontaneously, respondents were

asked if they had suffered any raids from animals living within the park, and the significance of this as a cost of conservation was discussed. Next, qualitative data from semi-structured interviews and general observation were used to identify and examine other costs of conservation for local people, including costs which cannot easily be quantified, such as loss of access to resources which can no longer be collected. Finally, the opportunity cost of lost land conversion opportunities was estimated by establishing the mean annual value per acre of farmland outside the park, and applying these values to the land within the park, thereby generating an estimate of how valuable park land would have been had it been used for agriculture. These costs were calculated using data from the IDHS on the number of acres each household farmed and their annual revenue from crop sales (see Chapter 3, Section 3.3.2.2 for how these were collected). The return per acre per year for each household was calculated, and these values were used to calculate mean revenue per acre across all IDHS households. This value was then multiplied by the number of acres of land within BINP, to estimate the overall opportunity cost resulting from the prevention of agricultural conversion. This approach makes use of several assumptions. First, it assumes that all the land within the park could be converted for agriculture, which is not the case because much of it is too steep. Second, it assumes that the production value per acre of land would stay the same even in the absence of the forest, which might not happen if ecosystem services associated with the park (such as rainfall and soil retention) were lost. Finally, it only takes account of the sale value of crops, ignoring the economic value of crops consumed by the grower's household, and in this way underestimates the opportunity cost of forest protection. These caveats make the calculated values estimates rather than precise measures, but they nonetheless give an indication of the magnitude of the cost facing local farmers with a shortage of land.

The distribution of costs of conservation were again considered in all cases, using the same approach adopted for the costs of tourism and outlined above in section 6.3.2.

6.3.4 Local perceptions of tourism. Net cost or net benefit?

Various approaches were used to gain an understanding of how local people perceived the net costs and benefits of tourism, and how this affected their attitudes towards the industry. First, the IDHS asked respondents to describe the costs and benefits of tourism they were aware of, and their overall attitude towards tourism. To gain a deeper insight into this issue,

respondents were also asked how they would feel if tourism activities were to be suspended in the area, for example because the gorillas caught a disease from tourists. This question was included because after piloting the survey with a few respondents it seemed that they found it easier to evaluate the impact of tourism on their lives by imagining a plausible scenario where it had ceased. Beyond the formal IDHS, local perceptions of tourism were evaluated through informal discussions with local people, and semi-structured interviews with targeted individuals representing certain groups or with specific knowledge of tourism. Informal conversations were carried out whenever possible during fieldwork, and considerable time was spent in a variety of locations talking to people about how tourism affected their lives. Extensive notes were written-up later the same day from these discussions, and in this way a general picture of how tourism impacted upon local people was developed.

Particular care was taken during the evaluation of overall attitudes to tourism to assess the kind of costs and benefits which local people were considering in reaching their conclusions. This was done for two reasons; first, because it was considered possible that some of the costs of tourism might not be perceived by local people, meaning that their attitudes towards tourism might not be based on complete information, and second, to give an insight into which sectors of the tourism industry were perceived to be delivering the most benefits in the eyes of local people. To investigate these issues, wherever possible during the IDHS and open discussions respondents were asked to detail what kind of costs and benefits they saw, and how these contributed to their overall attitude.

6.3.5 Local perceptions of conservation. Does tourism compensate for the costs?

To evaluate the effectiveness of tourism as a tool for modifying and improving the relationship of local people and the National Park it was necessary to consider the extent to which benefits from tourism compensated for the costs of conservation. This was done using a qualitative approach, based on talking to local people about how tourism had affected their attitudes towards the National Park, the gorillas within it, and UWA. The IDHS asked respondents to describe how they felt about the National Park overall, and how their attitude towards it had changed since it was first gazetted. This latter question was asked because it is well described in the literature that at the time the park was established in 1991 there was a lot of conflict with local communities (Chapter 2). There

was also no tourism at this time, so I wanted to establish whether or not the establishment of tourism in the study area since 1991 had affected the way local people felt about BINP. Finally, the IDHS questionnaire asked respondents what they thought should be done with the NP if tourism activities ceased. This was asked to investigate the extent to which any positive feelings towards the park they might have were purely because of tourism, or if in fact they held a more generally conservationist attitude. These issues were also investigated in open discussion with local people, semi-structured interviews with key informants, and through general observations, in the same way and with the same respondents as described in Section 6.3.4 above.

In both the IDHS and open discussions with local people, particular attention was paid to whether the benefits of tourism actually compensated for costs of conservation, or if there was a cost/benefit mismatch. This issue was investigated by asking respondents whether or not they felt that the costs they had suffered from conservation (if any) were made good by tourism, or if the impact of tourism affected them in a different way.

No attempt was made to measure changing relationships with the NP in terms of behaviour. Clearly this information would be essential to making a complete evaluation of Link 2 under the ecotourism framework, but it was decided that due to the constraints of time during data collection and the extraordinary difficulty of obtaining honest responses about illegal activity, any data collected would be too unreliable to draw clear conclusions. Also, teasing apart the impact of tourism from that of law enforcement in the area (which is at its strongest around the BINP headquarters) would make understanding the cause of changes in behaviour very complicated (see Baker, 2004, for a full discussion of the impact of ICD interventions on local behaviour towards BINP).

6.4 Results

6.4.1 The costs of tourism for local people

6.4.1.1 Economic costs

The market survey found that prices in Buhoma market were higher than those in the Nteko market for every item which could be compared except onions (Table 6.1)³⁶. Some of the starkest differences in price were for items heavily in demand by the tourism industry, such as chickens, cabbages and avocados. Indeed, it was often very difficult to find chickens for sale in Buhoma market, as they tended to be bought by the tour camps immediately.

Table 6.1: Comparison of market prices in Buhoma village and Nteko village in February 2004. Prices are given in US\$ per sale unit

Product	Unit	Buhoma price	Nteko price	Absolute difference	% difference
Tomatoes	3	200	100	100	100.00
Onions	Pile	100	100	0	0.00
Cabbage	1	500	150	350	333.33
Ground nuts	Cup	300	200	100	150.00
Matooke*	Bunch	3500	1900	1600	184.21
Beans	Kilo	800	450	350	177.78
Yams	Basket	2000	1500	500	133.33
Rice	Kilo	1000	800	200	125.00
Posho [†]	Kilo	600	250	350	240.00
Egg	1	200	150	50	133.33
Sugar cane	1	150	100	50	150.00
Goat meat	Kilo	3000	2500	500	120.00
Beef	Kilo	2500	2000	500	125.00
Pork	Kilo	2200	2000	200	110.00
Chicken	1	6000	3000	3000	200.00
Mangoes	3	100	60	40	166.67
Avocados	1	100	25	75	400.00
Sugar	Kilo	1600	1200	400	133.33
Cooking oil	Pot	1800	1400	400	128.57

* Matooke are green bananas which are steamed to make the staple carbohydrate of south west Uganda

[†] Posho is flour made from various cereal crops which is mixed with boiling water to make a thick paste

³⁶ Some items are not listed because their prices were not comparable. This occurred because the units they were sold in did not match (e.g. in one market they were sold in threes, and in another by the kilo). However, it seemed that even for these items prices were consistently higher in Buhoma

From general observations and discussions with people living in the study area it was clear that the high prices in the local markets were a problem for many people. Prices had risen rapidly during the last few years prior to the survey, and they were beginning to make it difficult for some people to buy items they needed. The impact of increased prices also had different effects for different people. Those with considerable land holdings and production who were able to sell their excess produce benefited from the increased prices as they resulted in a boost to their income. On the other hand, poorer households with little land and little or no excess produce to sell found themselves priced out of the market and unable to buy basic commodities or different food products to diversify their diets. This made life more difficult for them, and could have affected their health, as discussed in the following subsection.

Whilst increased market prices were a cost to many local people, this does not mean that those suffering this cost necessarily attributed it to tourism. Indeed, during the IDHS, no respondent mentioned increased local prices as a cost of tourism. When asked if prices had increased, and if this was a problem, many agreed that it was, but did not perceive any link between this situation and tourism. However, some respondents did recognise that it was sometimes difficult to find products they needed available for sale, as they were so often unavailable. Chickens were most frequently mentioned in this respect. This suggests that many respondents recognised some link between tourism and product availability in the market, but did not make the step to recognising a link between tourism and prices.

Whilst carrying out the market survey it was noted that the general socioeconomic status of the Nteko area was much worse than Mukono parish. Very few houses were roofed with iron sheets, many more children were unclothed and appeared malnourished, and many basic items were unavailable in the market. Whilst these observations could not be quantified, they lend support to the findings presented in Chapter 4 which suggested that the study area was unusually well developed for the region in some respects.

6.4.1.2 Health costs

Tourism can have a positive impact on the health of host communities, by increasing incomes and making it possible for people to afford medicines and a better diet. However, as discussed above, it can also increase local prices, making it difficult for poorer members

of a community to afford certain foods, resulting in a deterioration in their diet and poorer health. It was not possible to confirm with any certainty that this was occurring at the study site, due to a lack of data from the pre-tourism era for comparison. However, discussions with some poorer members of the community suggested that they were less able to afford certain foods than they had been in the past, and that this was a problem when it came to feeding themselves and their children. This could lead to short and long-term health problems.

Beyond issues of nutrition, tourism can impact upon human health through the introduction of diseases to a host community. It is likely that some short-term infectious diseases were brought into the area by tourists, tour drivers, camp staff and soldiers, but in an area already suffering from severe health problems such as tuberculosis and malaria, these were considered unlikely to be of dramatic importance³⁷. From discussions with health professionals working at BCHC, it appeared that a far more significant concern was the impact of tourism on the prevalence of Sexually Transmitted Diseases (STDs) in the area, and particularly HIV/AIDS. The study area was rural, and had received very little in the way of HIV/AIDS education programmes from the central government. As a result, whilst members of the study population were typically aware that the disease existed, in the face of competing western and local explanations of its source and treatment they remained poorly aware of sensible precautions to avoid infection. Under these conditions, the arrival of tourism represented a considerable disease threat. Whilst it seems unlikely that tourists frequently (if ever) had sex with local people (unlike some mass tourism destinations elsewhere, e.g. Clancy, 2002), the industry brought drivers and other tourism workers with money to burn to the study area for short term trips, and it seems certain that many of them made use of local sex workers. Further, the several hundred UPDF soldiers stationed in the area (to protect the tourists) also frequented local brothels, or took local girlfriends or wives. Both tourism workers (Forsythe *et al.*, 1998) and soldiers (Miles, 2003) are at a high risk of HIV/AIDS infection, and it seems highly probable that they must have infected some local people. The full extent of HIV/AIDS infection in the study community is not known, nor can it be unless a large scale testing programme is carried out. This possibility was being investigated at BCHC at the time of fieldwork. However, several cases of HIV/AIDS have

³⁷ The impact of tourism on the health of gorillas is considered in Chapter 7

been confirmed in the study area, and even in the absence of quantified measurements, it seems fair to say that HIV/AIDS could be an enormous cost of tourism to the study population in the future.

The risk presented by diseases such as HIV/AIDS to members of the study population was most immediate for female sex industry workers, of whom there were a considerable number in the area. The next most vulnerable group were probably unmarried young women, many of whom had become girlfriends to soldiers posted in the area. In the longer term the entire sexually active population is vulnerable to acquiring the disease, and its impacts could be felt by all members of the community, including the young and very old, as productive members of households become unwell with AIDS.

Although HIV/AIDS represents potentially the greatest of all costs of tourism for the study community, at the time of fieldwork only a handful of local individuals perceived it as a threat. These individuals were limited to employees of BCHC who were told about it by the American and Ugandan doctors working there, and some better educated employees of tour camps and UWA. In general, members of the local population did not mention any link between tourism and HIV/AIDS, or mention it as a concern for them in the future.

Although some people may not have spoken about the disease out of stigma or fear, it did appear that there was a major underestimation of the potential problems it could cause. Indeed, local people seemed to underestimate many of the possible long-term costs of tourism, and this is discussed in more detail with reference to its impact on local attitudes to tourism in Section 6.4.3.

6.4.1.3 Cultural costs

Two tourism attractions were identified which posed a particular risk of the commodification of local culture, a phenomenon widely recognised as a potential cost of tourism in the anthropology of tourism literature (Stronza, 2001; Chapter 1). These were the cultural performances of the Orphans' group, and of the Batwa living in the study area. In the former case, the children performed a series of dances and songs to tourists. These included many components which were commonly observed at local events in the absence of tourists, suggesting that they were in some way related to genuine contemporary culture. The performances were free for tourists, but they had the opportunity to buy crafts from the

children afterwards, and to sponsor the education of a group member if they wished³⁸. The performances were introduced by the group coordinator, who spoke on behalf of the children in the group. All Orphans' group members were Bakiga, as was the coordinator. Speaking to group members and to tourists attending the performances, it appeared that the interactions between tourists and the group were generally very positive. The group were invited to come to the tour camps to perform on their own terms, they did not request any compulsory payment, and the great majority of tourists enjoyed the performances enormously. The group and its members had agency over the events, and could refuse to perform if the children were tired or for any other reason, meaning that they retained control of the interaction.

The contrast with the Batwa performances (which formed part of the village walk) was stark. The Batwa performed a programme of songs and dances, similar to the orphans, in a clearing in front of their homesteads. They had no choice about when they performed, being called from whatever they were doing by the ringing of a bell when a tour group was approaching. The performances were introduced by the Mukiga walk guide, who did not translate on behalf of a Mutwa spokesperson, giving the impression that the Batwa were not considered capable of speaking for themselves. Tourists paid for the performances as part of their walk fee, and many also felt pressurised to give a further tip after the show. Speaking to tourists after they had watched the Batwa perform, many felt that they had been party to a very awkward cultural interaction which objectified the Batwa. Indeed, some likened the experience to going to a freak show or looking at animals in the zoo – a comparison they found uncomfortable. Unlike the orphans' performances, it appeared that the Batwa had no control over events. The tourists arrived uninvited on their land, and it was expected that the Batwa would drop everything to perform for them. These performances therefore appeared to represent a socio-cultural cost of tourism for the Batwa, as they objectified a marginalised group and reinforced cultural stereotypes and hierarchies in the eyes of the dominant Bakiga. Further to this, the Batwa seemed poorly equipped to deal with the cash they earned from tourism, with many showing clear signs of alcoholism.

³⁸ See Chapter 5 for details of benefits of group membership, and of problems with the delivery of benefits to group members

A further, rather less obvious impact of tourism on local culture was driven by the presence of soldiers in the village. Many local people complained that they brought unfamiliar ways of behaving into the area which were not normal for Bakiga, and that they were taking young girls as wives or girlfriends, and often getting them pregnant. Many people also complained of the advent of a sex industry in the area, with a considerable number of local women (and some Congolese immigrants) openly soliciting for business from soldiers, tour drivers and locals in the evenings. This was thoroughly disapproved of by many respondents, and particularly by the elderly.

Tourism appeared to have had some general impacts on the local way of life and behaviour. Some local boys in particular used many English turns of phrase and profanities which were not normally heard in the area. A number of children could be found begging in the streets or asking tourists for bottles or pens, although it must be said that in my experience this problem was worse in other tourist destinations in the country, and that some effort had been made (particularly by the Orphans' group) to curb begging. Tourism may also have had an impact on the religious and marital practices of the Bakiga in the area, by showcasing a different way of life, but in the absence of comparative data this could not be formally investigated.

The cultural impacts of tourism were felt more strongly by individuals closely involved in the industry and with tourists. The lives of the Batwa in the area were totally transformed by tourism, as they made the transition to tourism as their key source of income. Workers in the tourism industry were much more likely to adopt western styles of dress and behaviour, and children living close to the road seemed more likely to beg from tourists. In discussion with local people, nobody spontaneously mentioned any of the cultural impacts of tourism identified here as costs, although they did often acknowledge that tourism had made a difference to local culture.

6.4.1.4 Exposure to risk and lack of control of the tourism industry

An oft-cited concern with tourism is the fickle nature of the industry (e.g. Lepp & Gibson, 2003). The popularity of a destination is highly vulnerable to political conflict, disease outbreaks, changes in the costs of travel or trends in consumer choice. If individuals involved in the industry become completely dependent on it, they are vulnerable to losing

their livelihoods should tourism cease for some reason. This problem was highlighted at the study site by the events of March 1st 1999, when Rwandan rebels murdered several western tourists, resulting in the near total termination of tourism in the area for 6 months. Local people remembered this time as being very difficult, with very little money in the area and a lack of basic commodities such as salt and sugar. Indeed, some compared it to the worst days under the former President Idi Amin Dada. Since that time tourism at BINP has recovered to well above the pre-1999 level, and it is probably fair to assume that the area is even more dependent on tourism now than it was then. That the cessation of tourism could have such a negative impact on the area goes to show how positive (or at least less negative) it is most of the time, but it also highlights the importance of individuals avoiding becoming dependent on tourism. Unfortunately many local people did appear to be totally dependent on tourism, having sold their land after gaining employment or starting a business, saying that they could not see the point of keeping cows or growing crops when they could earn good money from a job. This is a concern, because these individuals were increasing their exposure to risk as a result of tourism, and therefore their potential to suffer a cost from it.

The tourism industry at BINP was not only dependent on tourists to deliver its positive impacts for the local community. It also relied heavily on institutional support from various donors and external agencies. This was particularly true of some of the organisations designed to support local people (such as BCRC, the Community Walk, and the Orphans', Women's and Porters' groups) which, as Chapter 5 demonstrated, were responsible for many of the benefits local people enjoyed from tourism. These organisations were supported by various combinations of, among others, IGCP, ITFC, MBIFCT, CARE, UNDP and FAO (see Chapter 2). Efforts had been made by these organisations to ensure that the local parties were reasonably autonomous and sustainable, but it was undeniable that they offered considerable ongoing support, particularly in the case of IGCP and ITFC. This was very welcome in the area, but hinted at institutional weaknesses which could result in the failure of local organisations in the absence of such support.

Going beyond donor dependency, it was clear that the local community had very little control over the tourism industry taking place in their area. Much of the industry was private sector driven, and most of the private sector enterprises were controlled by external

individuals. UWA also had great power over the operation of the industry, and again local people had minimal influence on its activities. Further, as mentioned above, many of the more community based organisations in the area were strongly dependent on donor organisations for funding and support, and these had considerable influence over their activities. As a result it was not possible to conclude that the local community had true control over the tourism industry, an issue widely considered to be of central importance to ecotourism and Community Conservation (Chapter 1).

6.4.2 The costs of conservation

6.4.2.1 Crop raiding

Contrary to what might have been expected given the location of the study area next to the forest, crop raiding was very rarely mentioned by local people as a problem associated with BINP. It was mentioned spontaneously in only one IDHS interview, and in a few other cases only following prompting. In all cases it was reported as relatively minor, causing a loss of a small proportion of crops. The one case in which crop raiding was mentioned spontaneously was for a household located high up the hillside in Mukono cell close to the National Park boundary. The respondent was a young man who complained that baboons and gorillas had come into his land, eaten some of his crops and damaged his eucalyptus trees. He felt aggrieved that there was no compensation available from UWA, and had clearly suffered a considerable cost. He did not appear to blame the animals involved or the forest, but rather laid the blame squarely at the door of Uganda Wildlife Authority. This was a commonly held opinion, and many local people seemed to feel that UWA owned all the animals in the park, were responsible for their behaviour, and ought to be able to prevent them from crop raiding.

Whilst crop raiding was generally not identified as a major cost of conservation, it did appear to be more of a problem for people living very close to the forest border, as has been found elsewhere in Uganda (Hill, 2000a). Many respondents living further from the park boundary commented that crop raiding was not a problem for them because they were far from the forest. In contrast, those who identified crop raiding as a cost for themselves all lived close or directly adjacent to the park.

6.4.2.2 Opportunity costs of forest protection

Useable data on farm size and crop income were returned for 128 of the IDHS households. From these data it was calculated that the IDHS households earned a mean 135,025.88 USh in cash from crops sold per acre per year. Much of this value was derived from the sale of tea, which was the most valuable cash crop in the area. The total area of BINP is 321 km², or 79320.51 acres, so assuming an identical rate of return were the park to be completely converted for agriculture, it would be worth 135,025.88 USh x 79,320.51 = 10,710,321,664.90 USh per year (about \$5,355,000 US). This figure is very much an estimate, (and probably an overestimate as discussed in Section 6.3.3), but its magnitude clearly demonstrates that the lost opportunity to convert BINP for agriculture was a major economic cost for local people.

Several respondents to the IDHS and people engaged in general conversation lamented the fact that it was not possible to convert land in the park for farming. On several occasions whilst in the forest with local people, exotic trees were pointed out to me which had been planted many years ago to mark out land claimed by local people for conversion. These reached deep within the forest, and it was clear that until it was gazetted, it had been expected that much of the forest would be cleared at some point for agriculture.

Unsurprisingly, the people most likely to complain of lost access to new land were those who themselves had very little land, or who were preparing to leave the family home to set up on their own. Several young men complained that they could not move away to establish their own shamba because no land was available, or because where it was prices were prohibitively high.

A further opportunity cost of conservation for the study population was the loss of access to timber and non-timber forest products (NTFPs). Before the National Park was gazetted, logging was the major income generating economic activity in the area (Baker, 2004; Chapter 2), and a common occupation of young men. The timber industry was not mechanised, and involved manual pit-sawing inside the forest to convert logs into transportable planks. As a result, it employed a large number of people. When the park was gazetted all logging became illegal, and it was clear that many local people had lost a major source of income when this occurred. Particularly affected were members of the Bayonga clan centred in Nkwenda village, who had been dominant in the local timber industry. It

was not possible to estimate the lost value of the timber industry to the area, because it ended over ten years prior to fieldwork. However it was clear that this had been a major blow to the local economy at the time.

Estimating quantitatively the opportunity cost of lost access to NTFPs for the study population was not possible. NTFP use varied widely, and as the area of BINP next to the study area was not a Multiple Use Zone (MUZ), their collection was illegal, making it extremely difficult to collect accurate data on this issue. Several respondents did mention that they were no longer able to enter the park to collect honey, hunt animals for meat or collect medicinal herbs. This was clearly a cost of conservation for them, and for those who had formerly made substantial use of NTFPs the cost must have been considerable. It did appear likely that some illegal NTFP collection was occurring, particularly for relatively inconspicuous items such as medicinal herbs. UWA patrols also continued to recover a number of snares in the park, suggesting that some level of illegal hunting was ongoing. Overall the cost of lost access to NTFPs appeared to be of moderate importance, particularly when compared to the loss of access to timber products.

6.4.2.3 Other costs of conservation

Some non-economic costs of conservation for the local community were mentioned in formal interviews or informal conversations with local people. Several people mentioned the difficulty (particularly in the past) of crossing the forest to visit the south side of BINP. At the time of fieldwork local people were allowed to use the trail to Nteko freely, a walk of about 3 hours. However, in the past this use was more controlled, and for a period it was very difficult to cross the forest. As many people went to the weekly market in Nteko, or wished to visit friends and relatives south of the park, this lost access was extremely inconvenient. It is to the credit of BINP that this situation had been rectified with improved access for locals on foot. There was a suggestion that the trail through the park should be upgraded to a road, partly to give access to the factory at Kayonza for tea growers south of the park, but this was rejected following an Environmental Impact Assessment (EIA) commissioned by BINP, which found that the impact on gorillas and the forest in the tourism zone would be too great (J. Makombo, *personal communication*). This caused some resentment among local people, who felt their needs were being placed behind those of the gorillas. Difficulties in crossing the park affected people with a strong need to get to

the south side the most, and in particular the considerable number of people living in the study area who were born in Kisoro district to the south of the park (107, or 3.8%, of 2821 individuals in the BHS).

Another general cost of conservation was loss of access to cultural and burial sites inside the forest. These were rarely mentioned by local people, and in general references to traditional local culture were rare. This seemed to be a topic which people were reluctant to discuss. Nevertheless, several people did mention sites inside the park, and lost access to them appeared to be a cost of conservation.

6.4.3 Local perceptions of tourism: Net cost or net benefit?

Despite the costs of tourism described in Section 6.4.1 above, it was clear that the majority of local people in the study area felt that the net impact of tourism on their lives was positive. When respondents to the IDHS were asked whether tourism was overall a good thing or a bad thing, all 138 answered that it was good. When asked how they would feel if tourism were to stop for some reason, the great majority said that this would be very bad for them and for the area, and alluded to the difficult situation following the attack in 1999. Even individuals belonging to households with no clear direct benefits from tourism felt that the industry was a positive thing. This was usually because they had close relatives who did benefit directly, or because they identified 'trickle down' benefits to themselves such as employment on the land of others who worked in tourism. In fact the level of recognition of even quite indirect benefits was surprising, and it was very difficult to find anybody with a harsh word to say about the industry. This could have been due to respondents saying what they thought I wanted to hear, but the remarkable consistency of the positive message from many people, including close friends, in many different circumstances and over more than a year led me to conclude that a broadly positive attitude to tourism genuinely existed throughout the study area.

The balance of costs and benefits clearly varied greatly across the study population, with some individuals doing very well indeed out of tourism, and others gaining minimal benefits but suffering some costs. This might be expected to have generated an attitude continuum from the very positive to the very negative, but this did not appear to be the case.

Rather, attitudes to tourism appeared almost universally positive. Possible explanations for this finding are considered in detail in the discussion section of this chapter.

When discussing perceived sources of benefits of tourism, it was clear that most local people attributed benefits to some sectors of the industry in the area but not others. By far the most commonly mentioned source of benefits was BCRC, which many respondents spoke of as being “their” camp, and they appeared well aware of some of the projects it had supported in the area. Beyond BCRC, respondents tended to mention other locally owned businesses and organisations as sources of benefits to them, including the Community Walk, the BVC camp, the Porters’ group, the Orphans’ group and the Women’s group. Very few respondents mentioned the other private sector camps as sources of benefits, unless they or a close relative were directly employed by them. These findings suggested that local ownership or control was an important factor in determining perceptions of tourism organisations and their value to people living in the study area.

6.4.4 Local perceptions of conservation. Does tourism compensate for the costs?

When asked how they felt about the forest, respondents to the IDHS were overwhelmingly positive. Almost all of them claimed to be in favour of the forest, and to want it to be protected into the future. By far the most commonly cited reason for this sentiment was that it brought tourists to the area, and that tourism was beneficial. Many respondents also mentioned the rainfall provided by Bwindi, although they frequently did so using technical language which suggested that they had learned of this concept from community education activities carried out by BINP. It was difficult to tell whether they really believed this to be a benefit of the forest, or were simply repeating what they had been told.

To investigate how the growing tourism industry might have changed attitudes to the park over time, respondents were asked how they had felt when BINP was first gazetted. In this case, answers tended to be negative, focusing on the costs of conservation as described in section 6.4.2 above, and a lack of any benefits from the park at that time. In particular, respondents commonly spoke of losing the income which used to flow to the area from the timber industry as a major problem in the early days of the park. As a result, most of the respondents were strongly against the park when it was first gazetted, and some spoke of actively campaigning against it. Clearly attitudes to the park had changed enormously over

the intervening years, and when asked why this had happened, respondents spoke almost exclusively of tourism. The typical scenario described was that as visitors began to come, local people realised the tourism benefits the park could bring, and started to be in favour of protecting the forest.

To investigate the extent to which current positive attitudes to the park were due to tourism, respondents were asked what they thought should be done with the forest if tourism stopped. Interestingly, the great majority said that it should still be conserved, but when asked why, almost all responded that it should be protected in case tourism started again at a later date. In many cases, interviewees mentioned the recovery of tourism post-1999 as justification for this opinion. Even if asked to imagine that all the gorillas died, making future gorilla tourism impossible, many respondents suggested that other animals could be habituated for tourists, such as chimpanzees, so that the park should still be conserved for tourism. Some interviewees did mention other ecosystem services such as rainfall as reasons to protect the park, but this was considered of little importance when compared to tourism.

The results presented in the preceding paragraphs show that tourism altered the attitudes of local people towards the forest. However, it does not necessarily follow that they felt tourism compensated them for the costs of conservation which they suffered. Revealingly, when discussing the costs and benefits of tourism and conservation, respondents often spoke of costs of conservation being the fault of UWA and the National Park as an institution. If an animal raided their land, they felt that UWA should compensate them with money or food. If they could not afford land because none was available, they felt the government, and specifically UWA, should help them. However, respondents did not typically associate the benefits of tourism with UWA or BINP, being far more likely to assign credit for these to the forest, the gorillas, or the President of Uganda, whom many respondents revered. This viewpoint appeared to be common, but it was not possible to confirm it fully because I did not understand its significance until relatively late in the fieldwork period. A particular problem was that although it gradually became clear that many respondents perceived two different things when talking about the physical forest and the park as an institution, they only used one word to describe both ("*eihamba*" in Rukiga, which translates directly as "forest"). This made it difficult to realise that a perceptual

distinction existed, and it was only detected through long discussions with the main project RA and through my increasing ability to follow and participate directly in Rukiga interviews with respondents. This finding and its significance are discussed in more detail in the discussion section of this chapter.

6.5 Discussion

6.5.1 The costs of tourism for local people

6.5.1.1 Economic costs

Tourism has been associated with increases in market prices at destinations elsewhere (e.g. Pattullo, 1996), and a similar situation was found at the study site. Whilst it is impossible to establish the precise extent to which tourism was responsible for the observed increase in market prices in the study area, it does seem likely that it was a major contributing factor. Many of the products which had seen the greatest price inflation were those consumed in large quantities by the tour camps. In addition, many of the local people who bought more expensive luxury products such as meat from the market were themselves employees or direct beneficiaries of the tourism industry. The economic concept of supply and demand dictates that when demand increases with no change in supply, the price of products will rise, and it appears that the tourism industry was driving this process in the study area.

Other factors which might have increased prices were the presence of the UWA headquarters in the area, and the presence of the BCHC. Both of these bought considerable quantities of market produce and might have increased prices, but both consumed much less than the tour camps and associated businesses within the tourism industry.

Increased prices appeared to be a problem for the poorer members of the study community, and those with no products to sell in the market. However, recent research elsewhere in Uganda has found that prices charged can reflect the wealth of the buyer, and that increased prices caused by tourism can have little impact on those charged to very poor local people (Lepp & Holland, 2006). This possibility was not considered during data collection, and further research at the study area to investigate this phenomenon would be useful.

Mitigating increased prices in the study area would be extremely difficult, because prices are set by vendors in response to the levels of supply and demand. One way prices might be reduced is by increasing the supply of products regularly bought by the tourism industry

and local people. This could be achieved either through increased imports of food into the area, or by interventions designed to enhance productivity on local farms.

6.5.1.2 Health costs

Although no quantitative data were available to measure health impacts of tourism, sufficient circumstantial evidence was collected to suggest that these impacts, particularly through the spread of HIV/AIDS, could be very severe in the study area. Some other studies have linked tourism to the spread of diseases (e.g. Forsythe *et al.*, 1998), but it seems that the parallels between the tourism industry and other sectors better known for spreading STDs, such as haulage, have received insufficient attention in the literature. Investigating the level of HIV infection in the study area and any link with the tourism industry should be seen as a priority for future research.

The most obvious approach which might be taken to address the HIV/AIDS risk brought by tourism in the study area would be to mount an education campaign similar to those which have been effective in other areas of Uganda (Whitworth *et al.*, 2002; Gallant & Maticka-Tyndale, 2004). These have focused on encouraging appropriate sexual health practices such as condom use, abstinence and faithfulness. At the time of fieldwork BCHC was in the process of raising funds to carry out an education campaign, and it is understood that they have subsequently begun holding education sessions with young people in the area.

6.5.1.3 Cultural costs

Several examples of cultural impacts of tourism were identified in the study area, including commodification of culture and changes to local language and behaviour. The most obvious example of the commodification of culture was the performances of the Batwa, which seemed to objectify them and gave them little control over encounters with tourists. In this respect they were tourism attractions rather than tourism beneficiaries, a phenomenon which has been described with marginalised people elsewhere (Liu & Wall, 2006). This situation left the Batwa vulnerable to exploitation, and could be classified as a cost of tourism. That said, the Batwa themselves spoke very positively of tourism, and saw it as a great boon in their otherwise difficult situation, because it provided them with one of their only opportunities to earn a cash income. Without tourism the Batwa in the study area

would probably be even less well off, so this attitude is understandable, but it would seem desirable that in future they should have more control over their interactions with tourists.

6.5.1.4 Exposure to risk and lack of control of the tourism industry

The results of this study make it clear that although the study population has enjoyed many benefits from tourism, the industry has also exposed many people to increased levels of risk. Of particular concern are cases where individuals have specialised their livelihoods into tourism, resulting in total dependency on the industry and a lack of alternative sources of income. Such individuals risk losing even their food security in the case of a collapse in tourism, which is always possible in this volatile region. Ameliorating this situation would require people engaging in the tourism industry to retain diverse livelihood portfolios which include some activities independent of the industry. This might be achieved by providing employees or group members with advice about the fickle nature of the industry and how they might shelter themselves against risk.

The high level of dependency on external institutions in the sectors of the local tourism industry which delivered the most benefits to local people is a concern. Should these institutions give up their role in the area, for whatever reason, it is possible that some of the local organisations they support might fail, resulting in a loss of opportunities for some local people to benefit. The clearest way for this risk to be averted would be through the local tourism organisations becoming more independent, but this could be difficult because many of them lack the capacity, particularly in terms of human capital, to do so. It appears likely that NGOs with a major presence in the area, such as IGCP and ITFC, will continue to work with tourism organisations in the study area, and it must be hoped that these external bodies will encourage local control wherever possible. Another possibility which might be considered is greater regulation of the tourism industry in the area to ensure that local products and labour are used wherever possible. At the time of fieldwork there was no regulation, and private sector tourism businesses were free to operate, regardless of their approach to the local community. At the moment, tourism may be benefiting local people in the area more by luck than design, but careful regulation could improve this situation.

6.5.2 The costs of conservation

6.5.2.1 Crop raiding

Crop raiding was mentioned as a cost of conservation by some respondents to the IDHS, but it was less severe than might have been anticipated on the basis of other studies from forest-adjacent communities in Uganda (e.g. Hill, 2000a; Tweheyo *et al.*, 2005). This can be explained in two ways. First, the lack of elephants living inside the forest close to the study area meant that elephant raids did not take place. These are renowned for being particularly devastating often destroying entire fields (Madhusudan, 2003; Sitati *et al.*, 2005), so their absence helped to reduce the impact of raiding for those suffering from it. Second, the very high population density and human modification of the environment outside the park meant that there was little habitat there through which raiding species could readily move. The habitat matrix outside protected areas has been shown to be significant for crop raiding animals elsewhere in Uganda (e.g. Saj *et al.*, 2001), and it seems likely that raiders in the study area were disinclined to travel further than a few hundred metres into the human-occupied landscape. Some efforts were underway at the time of fieldwork to reduce crop-raiding events further, including the HUmAn-GORilla conflict resolution programme (HUGO), and such interventions should be encouraged in the future.

6.5.2.2 Opportunity costs of forest protection

The opportunity costs of conservation were found to be high, particularly in the case of lost access to timber and lost access to land to convert to agriculture. Indeed, the agricultural opportunity cost of conservation may even have been greater than the annual value of BINP to UWA through tourism (see Chapter 7 for details of the tourism value). The opportunity cost calculated is very much an estimate, but suggests that BINP may be similar to other parks in East Africa which make a profit from tourism but which nonetheless might be more valuable to the national economy were they converted for agriculture (e.g. Norton Griffiths & Southey, 1995). Furthermore, the benefits from agriculture would accrue directly to local people, whereas those flowing from gorilla permit sales do not. On the other hand, BINP is believed to provide considerable ecosystem services (UWA, 2001), which are not readily quantified in cash terms, and these should always be borne in mind when considering the balance of costs and benefits of forest conservation.

As the population in the study area increases, it is likely that the opportunity costs of conservation will become more severe, and their effects more far-reaching. For example, as pressure on land, and therefore its value, grows ever greater, traditional patterns of dispersal from the parental household may break down, because land will not be available for sons to occupy as they leave the parental household. In addition, ever more marginal land will come under the hoe, such as extremely steep hillsides which are very vulnerable to runoff erosion caused by rain (Sidle *et al.*, 2006). Some respondents spoke of this happening already. As this process continues, the opportunity costs of being unable to convert relatively flat forest in the area will get greater.

To reduce opportunity costs of lost access to agricultural land, either more land needs to be found elsewhere, or the productivity of existing agricultural land needs to be increased. Finding land elsewhere is highly unlikely in the study region, because so little is available. However, it might be possible to increase productivity with the application of farming techniques appropriate to the needs of local farmers (i.e. not requiring expensive and scarce inputs or machinery). If feasible, such interventions designed to improve productivity in the future could be very effective at reducing this opportunity cost of conservation, and should be encouraged.

The loss of access to logging activities was also identified as a considerable cost of conservation. Reducing this cost would require the provision of alternative sources of income to replace timber. In the study area the tourism industry has effectively filled this gap for some individuals, but others who once gained from logging have missed out, and elsewhere around the park benefits from tourism have not been available. Other ICD interventions may be required to compensate for this cost, and some of these in the local context are discussed in Chapter 2 (and in detail by Baker, 2004).

6.5.2.3 Other costs of conservation

Difficulties in crossing the park and loss of access to cultural sites were identified as costs of conservation. The former had largely been resolved by the time of fieldwork, but the latter was possibly still a problem, although it was difficult to ascertain how important this cost was. Resolving this issue would appear to be quite straightforward for UWA, which

could organise regulated visits to sites for interested locals. This measure should be investigated by the park authorities.

6.5.3 Local perceptions of tourism: net cost or net benefit?

Tourism is in theory supposed to bring net benefits to people living at the destination, resulting in positive attitudes towards the industry (Ross & Wall, 1999). However, as the examples given in Section 6.2 demonstrated, several factors can combine to prevent the link between tourism benefits and positive attitudes from becoming established. It is therefore perhaps surprising that despite costs of tourism in the study area which were varied and in some cases potentially severe, local people were found to hold near universally positive attitudes to tourism. There are four possible explanations for this finding. First, the costs of tourism may have very rarely outweighed the benefits at the individual level, because they were negligible or because they only affected people who also benefited greatly from the industry. This would make a positive attitude to tourism a rational position. Second, where the costs of tourism outweighed the benefits to individuals, they may not have been perceived to do so, making positive attitudes to tourism rational, but based on incomplete information. Third, costs may have been perceived, but considered unimportant because they were not felt in the short-term. Finally, where the costs of tourism outweighed benefits to an individual, that individual might have placed such value on benefits felt by other relatives or the community at large that they nonetheless retained positive attitudes about the industry. None of these explanations are mutually exclusive, and each is considered in more detail below.

Several of the costs identified in this study had the potential to be serious, suggesting it was unlikely that attitudes to tourism were generally positive because the costs were negligible. In some cases the distribution of costs of tourism was skewed in such a way that the individuals suffering the greatest costs were those most closely involved in the industry. As the previous chapter showed, individuals directly involved in the industry received the most benefits from it, particularly in terms of cash income, so their positive attitudes to tourism could have been due to their receiving such great benefits that even the higher costs they suffered were fully compensated. The clearest cases of skewed costs was with the cultural impacts of tourism, which strongly affected individuals participating in performances for tourists and individuals working in the industry.

A more generally applicable explanation for the positive local attitudes to tourism in the area is that the benefits of tourism were much more tangible than the costs, and that attitudes were therefore formed on the basis of incomplete information (Gursoy *et al.*, 2002). The benefits which mattered to local people were measured in terms of cash income, access to healthcare and education, and other clearly recognisable outcomes. On the other hand, many of the costs of tourism were relatively difficult for local people to notice or to associate with the industry. People did feel that increasing market prices were a problem, but, as has been discussed, few connected this to tourism. The possible health impacts of tourism were very poorly understood in the area, and it is fair to assume that almost nobody took account of the possible long-term consequences of tourism as a route for HIV/AIDS to enter the area when considering their attitude to the industry. Some people did notice cultural changes as a result of tourism, and were aware of examples of the commodification of culture, but most did not perceive these as costs, and indeed many people were very keen to embrace western styles of dress and behaviour which they liked. It seems then that in many cases attitudes to tourism may have been irrationally positive, due to an underestimation of the true severity of the costs of tourism at the individual level.

In some cases costs may have been recognised, but given low significance because their effects were not felt in the short term. This could occur if local people applied a high discount rate to the future, meaning that they placed great significance on issues affecting them in the present but showed little concern about long-term consequences (e.g. Ninan & Sathyapalan, 2005). This is a particularly strong explanation for attitudes to the risk of HIV/AIDS entering the study community. Whilst many people were unaware of such a risk, others who were aware seemed to show little concern about it. This was not surprising, as people living in the study area faced more immediate difficulties in their everyday lives, and could not be expected to change their attitudes or behaviour to take account of a problem which might not affect them for decades, if ever.

The final possible explanation for the widespread positive attitude to tourism is that individuals placed great significance on benefits to their close friends and family, or to the wider community in general, even where they themselves suffered greater perceived costs than benefits. The results of the study lent some support to this possibility, because when discussing why they liked tourism, many respondents mentioned that their relatives had

benefited from it. The Bakiga place great importance on extended family and social networks for material support and livelihood opportunities (Ngologoza, 1998), and this might explain why respondents felt this way. Individuals also appeared to give some weight to benefits felt at the wider community level. This was particularly clearly demonstrated by the numerous references which were made to the situation following the attack in 1999, when the tourism industry in the area collapsed. Even people with no direct link to the industry spoke of a general level of suffering at the time, and said they did not want a return to that situation. This sentiment probably reflected in part a general desire to see the community as a whole benefit, and also suggested that there may have been benefits to individuals which were not detected by this study but which had been lost at that time.

It was interesting to discover that the main sources of positive feelings about tourism in the area were the locally owned and run tourism organisations and businesses. This might appear slightly surprising given the results of Chapter 4, which suggested that there was little difference between the amounts of retained revenue flowing from each of the camps. However, it makes sense in light of the distribution and nature of benefits flowing from each organisation, because the locally run groups and camps involved many more local people, had much more local control and generated non-economic benefits for the area such as improved access to education (Chapter 5). These findings support the general consensus in the tourism literature that local ownership and control of tourism is a major factor determining local attitudes to the industry.

6.5.4 Local perceptions of conservation: does tourism compensate for the costs?

Ecotourism theory predicts that tourism will change the relationship between host communities and natural resources, by delivering resource-based benefits and compensating for costs of conservation (Ross & Wall, 1999). The results of this study demonstrate clearly that most people in the study area felt that tourism delivered benefits, and that they associated them with the natural resource (in this case Bwindi forest), encouraging them to want to see it protected. However, it was much less clear that respondents felt tourism directly compensated them for the costs of conservation which they suffered. In particular, many said that costs were due to UWA, but benefits were due to the forest and the gorillas. At first glance this statement appears contradictory, because it might be assumed that people would perceive both the costs of conservation and the

benefits of tourism to be ultimately derived from the same entity, the National Park. In fact, it would appear that many respondents in the study area saw the forest and the National Park as distinct, thereby breaking the link between perceived costs and benefits. They favoured the forest as a physical home for the gorillas, but disliked the National Park as an institution which brought them costs. In other words there was a perceptual mismatch between the source of costs of conservation and benefits of tourism, meaning that many respondents did not feel that one compensated for the other (Figure 6.2). It is possible that the clarity of this distinction was overstated by respondents, who may have identified my interviews as an opportunity to elicit compensation from UWA by describing uncompensated costs (Scott, 1987), but it certainly appeared that some form of perceptual mismatch existed.

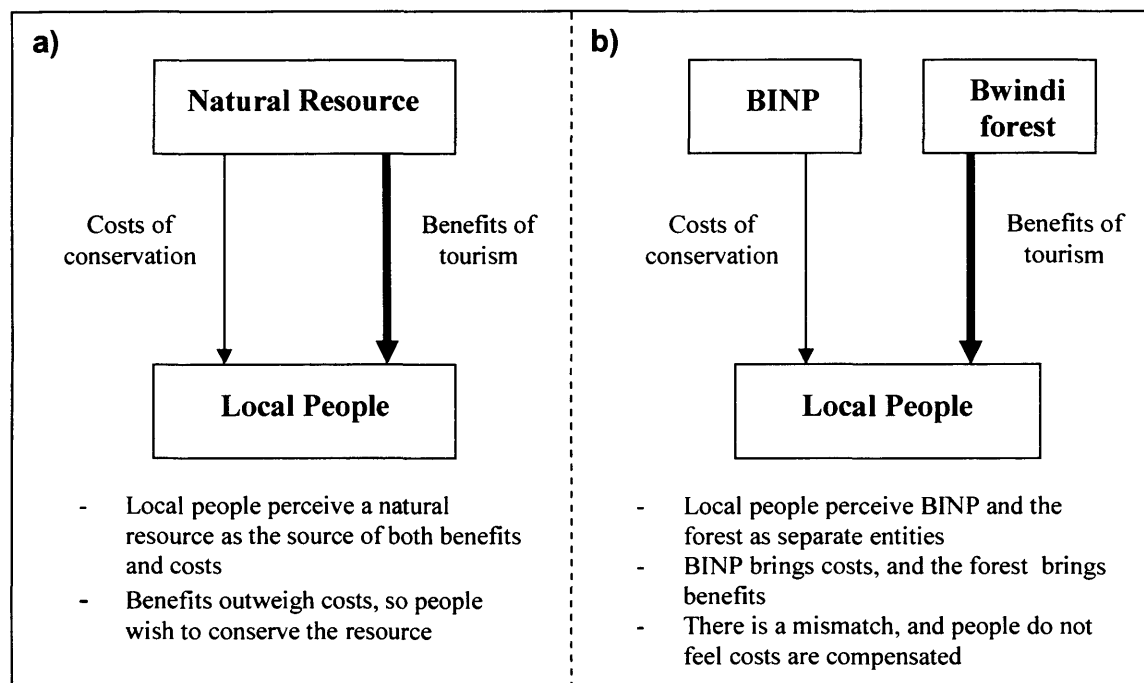


Figure 6.2: A conceptual model showing how local people perceived their relationship with natural resources **a)** under the idealised theoretical framework for ecotourism, and **b)** in reality at BINP

If indeed the suspected mismatch existed, the finding is significant in two ways. First, it has implications for park management, because unless members of the study population perceive benefits and costs as coming from the same source, there is a risk that relations with UWA might deteriorate, and that some aspects of park conservation could be compromised. Second, it has implications for interpreting the results of interviews carried out with local people. If respondents use the same vocabulary when talking about the forest

or the park institution, but mean very different things by them, this has the potential to confuse the findings of research carried out in the area. This could have happened in this research, as until late in the fieldwork process I used the words “park” and “forest” interchangeably in English when carrying out interviews through an interpreter, which might have caused confusion for both my interpreter and my respondents. In future, researchers operating in this area should take care to consider this problem.

6.6 Conclusions

Chapters 4 and 5 demonstrated that tourism delivered considerable benefits to the study area, but that these were not evenly distributed, with some people unable to access benefits because they lacked the appropriate enabling assets. This chapter has demonstrated that as well as bringing benefits to the study area, both tourism and conservation delivered costs. Many of the costs were subtle, and could be difficult for local people to perceive, and many were unevenly distributed across the study population, with some people suffering disproportionately when compared to others. Under these circumstances theory predicts that some respondents should hold positive attitudes about tourism and BINP, whereas others for whom the balance of costs and benefits was negative should not. In fact, attitudes to both tourism and conservation were found to be broadly positive, with almost all respondents in favour of tourism and wishing to see Bwindi forest protected because of the tourism it supported. At first glance this might suggest that tourism in the study area was performing well under Links 1 & 2 of the theoretical framework (Figure 6.1). However, the results presented in this chapter also demonstrate that many people underestimated the costs of tourism and conservation for various reasons, and that a perceptual mismatch may have existed between the source of costs of conservation and benefits of tourism in the eyes of local people. These issues complicate analysis of the performance of tourism in the area, and demonstrate the utility of in depth research.

Chapters 4, 5 and 6 have all considered the socioeconomic impacts of tourism in the study area, and how these affected the relationship of local people and the National Park. In so doing they have evaluated tourism at BINP with respect to two of the three links in the theoretical framework for ecotourism. However, they have not considered the direct impacts of tourism on the National Park and species living within it. This is the subject of the following chapter.

Chapter 7: Tourism for conservation: the environmental impacts of tourism

7.1 Chapter summary

Chapters 4, 5 and 6 investigated the socioeconomic costs and benefits of tourism at BINP, and considered how tourism affected the relationship of local people with the National Park. This chapter addresses the remaining link in the ecotourism framework (Link 3), between tourism and biological diversity (Ross & Wall, 1999; Chapter 1; Figure 7.1). Under this link, tourism is supposed to deliver benefits for the environment, usually measured in terms of revenue generated to pay for conservation activities. However, the industry can bring environmental costs as well as benefits, and it is a crucial tenet of ecotourism theory that these costs should not outweigh the benefits of tourism for conservation. This chapter examines this balance at BINP by measuring some of the most important costs and benefits of tourism for the environment at the site. It begins by considering the positive impacts of tourism, specifically the revenue generated for park management activities. It then moves on to make a detailed assessment of the possible risks of gorilla tracking tourism, focusing on the threat of disease transmission from tourists to gorillas. Finally the chapter evaluates the net impact of tourism on the environment at BINP and makes some recommendations aimed at reducing the risks to gorillas as a result of tourism.

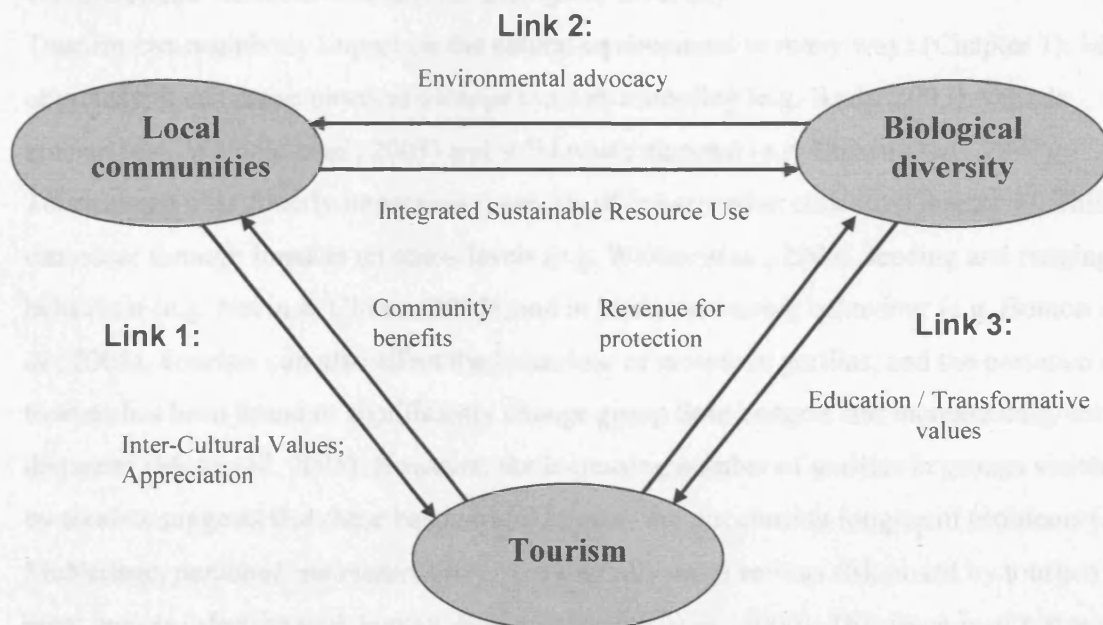


Figure 7.1: The theoretical framework for ecotourism, adapted from Ross & Wall (1999). This chapter addresses Link 3

7.2 Introduction

7.2.1 The benefits of tourism for biological diversity

The main way in which tourism can directly benefit biological diversity is by generating revenue to pay for conservation activities (Ross & Wall, 1999; Chapter 1). Funds can be raised through park entry fees, the sale of permits to carry out activities, and concession charges levied on tour operators and tour camps (Walpole *et al.*, 2001). Many Protected Areas in the developing world charge fees in some form, but as Chapter 1 explained, there are relatively few examples of parks which successfully cover their costs through tourism. The ability of parks to generate large returns from tourism depends on various issues, including the presence of attractive species to visit (Walpole & Leader-Williams, 2002), and the destination being relatively safe, with good infrastructure (Wilkie & Carpenter, 1999). Luckily for BINP, over the last few years it has met these criteria, and gorilla tourism in Uganda and elsewhere has widely been reported as a type example of low-volume, high-revenue tourism (McNeilage, 1996; Hatfield & Malleret-King, 2003). Nonetheless, there remain some issues of concern with tourism at Bwindi and its relationship with the National Park, because tourism can bring direct costs for the environment. These are considered in the following subsection.

7.2.2 General costs of tourism for biological diversity

Tourism can negatively impact on the natural environment in many ways (Chapter 1). Most obviously, it can cause physical damage through trampling (e.g. Ikeda, 2003), vehicle erosion (e.g. Walpole *et al.*, 2003) and solid waste disposal (e.g. Brown *et al.*, 1997). Tourism can also directly impact upon species of conservation concern (Chapter 1). This can occur through impacts on stress levels (e.g. Walker *et al.*, 2006), feeding and ranging behaviour (e.g. Nevin & Gilbert, 2005), and in birds, on nesting behaviour (e.g. Bouton *et al.*, 2005). Tourism can also affect the behaviour of mountain gorillas, and the presence of tourists has been found to significantly change group time budgets and increase daily travel distances (Muyambi, 2005). However, the increasing number of gorillas in groups visited by tourists suggests that these behavioural impacts are not causing long-term problems (A. McNeilage, *personal communication*). A potentially more serious risk posed by tourism to great apes is infection with human diseases (Daszak *et al.*, 2000). This issue is of serious concern for gorilla conservation (Woodford *et al.*, 2002), and is considered in more detail in the following subsection.

7.2.3 The risks of tourism: disease transmission to mountain gorillas

All non-human great apes are vulnerable to a range of human diseases (and *vice versa*), due to their close genetic relatedness to man (Ott-Joslin, 1993; Wolfe *et al.*, 1998; Lilly *et al.*, 2002). The best known case of a zoonotic infection of humans by great apes is the transmission of SIV from chimpanzees (*Pan troglodytes spp.*), resulting in HIV and AIDS in humans (Keele *et al.*, 2006). Humans can also infect apes, and it is known from laboratory populations that chimpanzees are vulnerable to diseases such as measles (paramyxovirus) and whooping cough (Ott-Joslin, 1993; Barnett *et al.*, 2004). It is extremely difficult to prove beyond doubt that wild apes have been infected with human diseases, but outbreaks of polio-like (Goodall, 1971) and influenza-like (Kortland, 1996) diseases in wild chimpanzees are believed to have been of human origin. Mountain gorillas do not survive in captivity, but examples of suspected human to gorilla transmission in the wild include an outbreak of scabies (*Sarcoptes scabiei*) in Uganda in 1996 (Macfie, 1996; Graczyk *et al.*, 2001b; Kalema-Zikusoka *et al.*, 2002) and evidence for a shared origin of various human and gorilla gut parasites, such as *Cryptosporidium parvum* and *Giardia duodenalis* (Nizeyi *et al.*, 2001; Graczyk *et al.*, 2001a; Nizeyi *et al.*, 2002; Graczyk *et al.*, 2002a; Graczyk *et al.*, 2002b).

The degree of threat posed to gorillas by tourists during their visit to see mountain gorillas depends on three main factors: first, the events taking place during the encounter with gorillas in the forest; second, the characteristics of the gorillas with which close contacts take place, and third, whether the tourist is infected with a risk disease, and if so the infectiousness and mode of transmission of that disease. Each one of these factors is discussed in turn below.

7.2.3.1 Events during tourist visits to gorillas

The events taking place in the forest during tourist visits to gorillas have an important role to play in determining the risk of a disease being transmitted between the two species. The tourist behaviours of importance depend on the mode of transmission of each disease. For example, diseases transmitted by the faecal/oral route depend on tourists defecating in the park, whereas diseases transmitted by aerosol require tourists to get close enough to gorillas for exhaled particles to reach them. To minimise risky behaviour by tourists, they are expected to abide by a number of rules during their visits to the gorillas (for full details of

all tracking rules see IGCP, 2005). First, tourists are supposed to declare if they are sick, and to not enter the forest if they feel unwell. Second, a rule on the minimum distance that tourists must keep from the gorillas is applied. This was recently extended from 5 m to 7 m in Uganda following the publication of a report into gorilla tracking rules (Homsy, 1999), which cited evidence that particles from a human sneeze can travel up to 6 m in still conditions (Baker, 1995). Third, tourists defecating in the park are required to bury their faeces. Fourth, tourist visits are limited to a maximum of one hour with the gorillas and the number of visitors allowed in each group is controlled. This number was six at the time of fieldwork for this study, but has since been increased to eight.

The rules outlined above are designed to minimise the risk of disease transmission to gorillas during tourist visits, but rules governing tourist behaviour have been found to be widely ignored elsewhere (e.g. Walpole *et al.*, 2003), and successfully enforcing tracking rules is regarded to be difficult because of gorilla and tourist behaviour (Butynski & Kalina, 1998). Further to this, there is a concern that guides might allow rules to be broken in pursuit of tips or as a result of accepting bribes (McNeilage, 1996). Infringements of gorilla tracking rules are widely reported (Aveling, 1991; McNeilage, 1996; Macfie, 1997; Butynski & Kalina, 1998), but to date there has been no study which sets out properly to quantify these infringements and hence to assess the risk of diseases being transmitted to free-ranging mountain gorillas as a result of tourism activities.

7.2.3.2 The vulnerability of gorillas

The characteristics of the gorillas which are closely contacted are important, because disease transmission risk is a function of vulnerability of the recipient to infection as well as of the infectiousness of the source individual (Homsy, 1999). Juvenile gorillas are considered to be more at risk from human disease than adults, because they are weaker and less able to fight off infections (Kalema-Zikusoka *et al.*, 2002). Juvenile gorillas are also reported to be more curious than adults and likely to approach tourists closely, particularly if they have been born into a habituated group and are therefore very familiar with human presence (A. McNeilage, *personal communication*). No previous study has examined how close contacts between tourists and gorillas occur or which individual gorillas are involved.

7.2.3.3 The health of tourists

Gorillas are perhaps most at risk of catching diseases from local people living in their habitat who often have poor health (Guerrera *et al.*, 2003) and from park staff and researchers who contact them very closely (Wallis & Lee, 1999). However, tourists pose a particular risk because a group of them spends an hour in close contact with each habituated gorilla every day (Chapter 2), and because they may bring with them novel infections against which the gorillas have no immunological protection (Wilson, 1995). Tourists are also more likely to be unwell whilst travelling than at home (Hill, 2000b; Woodford *et al.*, 2002), because of exposure to novel diseases, changes in diet and increased levels of stress and fatigue (Wilson, 1995). In a study carried out in Uganda's Kibale Forest National Park in 1998, Adams *et al.* (2001) investigated the health of tourists visiting chimpanzees (*Pan troglodytes schweinfurthii*), which, as great apes, are vulnerable to most of the same diseases which could be transmitted from humans to gorillas. In a questionnaire survey of 62 tourists, they found that 55% had suffered bouts of diarrhoea in the previous six months, 24% coughing, 15% fever and 13% vomiting. Further to this, many of the tourists did not have current vaccinations against relevant diseases. Making certain vaccinations a pre-requisite for ape tracking is one possible intervention which could be used to minimise the risk of disease transmission occurring, and indeed this has been applied at the Ngamba Island chimpanzee sanctuary run by the Jane Goodall Institute (JGI) in Uganda. Visitors to Ngamba are required to present evidence of in-date vaccinations against hepatitis A, hepatitis B, meningococcal meningitis, polio, tetanus, yellow fever, tuberculosis (TB) and measles. Even individuals who have suffered measles as a child are required to present evidence of a blood test to demonstrate active immunity (see Appendix F for full details of Ngamba requirements). Without such requirements, existing evidence suggests that tourists are unlikely to arrive with appropriate cover. For example, in the Adams *et al.* (2001) sample, only 6% of visitors had a current influenza vaccination, and 45% a current measles vaccination. A final result of interest from the Adams *et al.* (2001) study is that 67% of tourists either had already been to visit chimpanzees or gorillas in the wild before their visit to Kibale, or were planning to do so afterwards. This suggests that an infectious individual visiting Kibale would be likely to expose several different ape groups and possibly 2 species during their visit to the region, which would clearly further magnify the risk which they posed.

Adams *et al.* (2001) conclude from their data that the tourists in their sample posed an unacceptable risk of disease transmission to the chimpanzees. Their research is useful, but has some limitations which need to be addressed. First, they included no data on how close tourists got to the apes they are visiting, which, as described above, is important in the analysis of risk. Second, the six month time period which they used when asking tourists about symptoms from which they have suffered is very long relative to the likely duration of infectiousness (Bannister, 2000), meaning that the symptom frequencies in their tourist population are likely to be overestimates of actual risk. Third, at 62 tourists, their sample is not large enough to draw accurate conclusions about symptoms which occur at low frequency in the sample population. As a result of these limitations, there remains a need for a more detailed investigation into the current health status and vaccination record of tourists visiting great apes.

7.2.4 Research aims

Previous studies have found that tourism at BINP generates large amounts of revenue, and probably covers the costs of conservation activities at the park. However, no recent study has measured tourism revenue, and there is a general lack of research into the risks which tourism poses for the gorillas within the park which tourism is supposed to help conserve. These issues are considered in this chapter by addressing the following research aims:

1. To investigate the amount of revenue generated for Uganda Wildlife Authority by gorilla-tracking, and how it compared to park and tourism management costs
2. To measure the following key variables which affect the risk of disease transmission during tourist visits to gorillas:
 - How close tourists got to gorillas
 - How close contacts were initiated
 - How long close encounters lasted
 - Whether contacts were closer with juvenile or adult gorillas
3. To investigate the recent medical history and vaccination status of tourists visiting the gorillas

This chapter does not consider other environmental impacts of tourism on the forest or the study area. This is because, following the pilot study for this research, it was decided that

the low volume of tourists and the small number of tourism businesses in the area were having minimal direct impact on the environment. It is however acknowledged that some impacts existed, and that the data reported here therefore underestimate impacts to a certain degree.

7.3 Methods

7.3.1 Source data

This chapter makes use of data from various sources, including the tourist registration data collected by UWA and the tourist interview survey. For general details of how these data were collected, see Chapter 3. Specific data collection and analysis techniques used in this chapter are described in the following sections.

7.3.2 Tourism revenue generated for park management activities

Calculating the true net profit / loss for the National Park from permit and entry revenue directly was not possible, because UWA were not prepared to grant access to detailed records of park management costs and expenditure. However, they did kindly grant access to comprehensive visitor records which were kept by the BINP Information Clerk at the park gate. These were reviewed for the period November 1st 2003 to October 31st 2004, with the number of tourists visiting the gorillas on each day being recorded. This year was selected for analysis because it matched the time period used for the leakage analysis carried out in Chapter 4. The cost (in \$US) of gorilla tracking permits and park entry through time were then multiplied by the number of visitors on each day to give the gross revenue raised by UWA as a result of gorilla-tracking tourism. As the price of permits differed according to the residency status of tourists at BINP (listed as foreign visitor, foreign resident or East African citizen), it was necessary to know how many tourists of each residency type had tracked gorillas during this time. Unfortunately this information was only available after 11th May 2004. To estimate the proportion of visitors of each type before this date, the proportion of each type after May 11th was calculated and multiplied by the number of tourists of unknown residency status. A further complication was that the price of tracking permits went up on August 1st 2004 (all prices are given in Section 7.4.1). Some tourists who had bought their permits prior to this date did not need to pay the higher price, but the number paying each price was not recorded in the UWA records. As a result it was assumed that all visitors after August 1st had paid the higher price. This necessary

assumption means that the final value for gorilla tracking revenue calculated will be an over-estimate. Further data with which comparisons could be made were found in unpublished 'grey' literature, much of which was in the form of reports. These were sought in the libraries of Uganda Wildlife Authority, CARE International Uganda, and the International Gorilla Conservation Programme (IGCP).

7.3.3 Events during tourist visits to gorillas

Data on events taking place during tourist visits to gorillas were collected from interviews with tourists who had recently returned from gorilla tracking (see Chapter 3 for full details of the tourist survey). Each interviewee was taken through a structured questionnaire which provided data on the details of their visit to see the gorillas. These were (1) how close they got to the gorillas at the point of closest contact, (2) how long this contact lasted, (3) the age category (juvenile or adult) of the gorilla involved if known, (4) whether these contacts were initiated by the tourist and guide group approaching the gorillas, or *vice versa*, and (5) the normal distance from themselves to gorillas during the visit encounter, measured as the closest they were for at least 15 cumulative minutes during the total 1 hour. Distances were estimated using a tape measure, with respondents asked to hold one end of the measure while I backed away from them until the respondent felt the appropriate distance had been reached. Duration was estimated by tourists in seconds. These techniques are simple and repeatable, and give data indicative of the true situation without requiring additional researchers in the forest. Respondents were not asked about the gender of gorillas as they were unable to identify this accurately in a pilot study. The contact initiator and gorilla age class were determined by the tourists themselves. Tourists were also asked which group they had tracked, who the guide was, and how much money they gave to the guide as a tip.

Data for tourists who tracked the same gorilla group on the same day were pooled to avoid pseudo-replication, with mean values for each independent tourist group (all those visiting one gorilla group on one day) being used for analysis. The actual proximity of tourists to gorillas was compared with the allowable proximity under the tracking rules (7 m) using a *t*-test. Differences in mean proximity were compared across tour guides by analysis of variance (ANOVA). The relationship between tips received by guides and contact proximity was examined using Pearson's correlation. To test for the effects of contact initiator and the age category of gorilla contacted on closest proximity and contact duration,

Linear Mixed Models (LMMs) were constructed in R 2.0.1 (function 'lme'; R Development Core Team, 2006; the rationale for mixed modelling is described in Chapter 3). In these models, contact initiator (tourist or gorilla) and gorilla age category (juvenile or adult) were fitted as fixed effects, and gorilla group and tourist group were fitted as random effects. The response variables were closest contact proximity (m), and contact duration (seconds). Both variables were log transformed to achieve normality. Explanatory variables were removed from the model until only those with significant explanatory power ($p < 0.05$) remained, and in each case the Akaike Information Criterion (AIC; a measure of goodness of fit) is reported.

7.3.4 The health of gorilla tracking tourists

In order to evaluate the health status of visitors to BINP, the tourist interview survey included a series of questions regarding health and vaccination history. Respondents were asked if they had suffered from specific symptoms during the last 24 hours (during which they had been gorilla-tracking) or during the previous 2 weeks. To encourage honest responses, interviewees were told that the information was confidential and that park authorities would not be informed if they admitted to having been unwell. The recall period of two weeks was selected because it was felt that tourists would struggle to recall their health for any longer period, and because ill health in the two weeks before tracking was likely to be indicative of ongoing infectiousness (Bannister, 2000). A range of relevant symptoms were included in the questionnaire, selected on the basis of ease of self-diagnosis, ease of comparability with the survey of Adams *et al.* (2001) and indication of respiratory, gastro-intestinal and nasal infections, as well as general symptoms of illness such as headaches and fever (Bannister, 2000; see Table 7.1 for full list of symptoms).

Table 7.1: Symptoms of disease asked about during interviews with tourists

Sore throat	Headache
Running nose / cold	Diarrhoea
High temperature / fever	Stomach ache
Aching joints (not brought on by physical exertion)	Vomiting
Cough	

Tourists were also asked about their vaccination history (see Table 7.2 for a full list of vaccinations recorded). In a pilot study tourists found it difficult to recall when vaccinations

had been given, so they were simply asked to state whether they had a current vaccination against each disease. If they were unsure of how long each vaccination lasted, I informed them at the time of the interview. In some cases, where appropriate, respondents were asked if they had suffered from the disease, as this can confer future resistance, particularly in the case of measles. In the case of TB, respondents were also asked if they had had a TB skin test or lung X-ray, the result of the most recent test and when it took place. Respondents were given the option to answer 'don't know' if they were unsure about whether or not they had a current vaccination in every case.

Table 7.2: List of diseases for which vaccination histories were requested from tourists

Influenza (only current year is in date)	Polio
Tuberculosis	Tetanus
Measles	Yellow Fever
Hepatitis A	Rabies
Hepatitis B	

To assess the risk of tourists spreading diseases from site to site or exposing apes to their own infectious diseases in more than one place, tourists were asked how many times they had already been to see chimpanzees or gorillas during their visit, and how many times they intended to do so before they left East Africa.

7.4 Results

7.4.1 Revenue generated for UWA by gorilla-tracking tourism

Between the 1st of November 2003 and the 31st October 2004 a total of 5133 tourists tracked gorillas at BINP. 3701 tracked gorillas before the 1st August, and 1432 on or after the 1st August. The prices of gorilla tracking during this time are given in Table 7.3.

Table 7.3: The price of gorilla tracking permits during the study period for tourists of each residency status

Residency status	Pre August 1 st 2004	After August 1 st 2004
Foreign visitors	\$ 275	\$ 360
Foreign residents	\$ 210	\$ 340
East African citizens	80,000 USh (about \$40 US)	100,000 USh (about \$50 US)

Of the 5133 tourists, residency status data were available for 2258. Of these, 2151 (95.3%) were foreign visitors, 39 (1.7%) were foreign residents, and 68 (3.0%) were East African

citizens. Multiplying these percentages by the number of tourists before and after August 1st, and then multiplying these estimated numbers of visitors in each category by the tracking permit price, gives total revenue estimates as follows: 1st November 2003 to 30th July 2004 = \$ 987,593.35 US, and 1st August 2004 to 31st October 2004 = \$ 501,715.52 US. This gives a grand total estimated gorilla tracking revenue for BINP in the year in question of \$ 1,489,308.87 US. Even after considering inflation, these figures clearly compare favourably to 1995 levels, when 3300 visitors came to Bwindi, and spent around \$600,000 US on gorilla tracking permits (Butynski & Kalina, 1998).

7.4.2 Events during tourist visits to gorillas

7.4.2.1 How close did tourists get?

A total of 364 tourists were interviewed, representing 133 independent tourist tracking groups. While no physical touching events were reported, the mean distance between tourists and gorillas at the time of their closest contact was 2.76 m, (\pm SD 1.34). This is significantly closer than permitted under both the new closest allowable distance rule of 7 m ($t = -36.54$, $df = 132$, $p < 0.001$), and the previous rule of 5 m ($t = -19.31$, $df = 132$, $p < 0.001$; Figure 7.2).

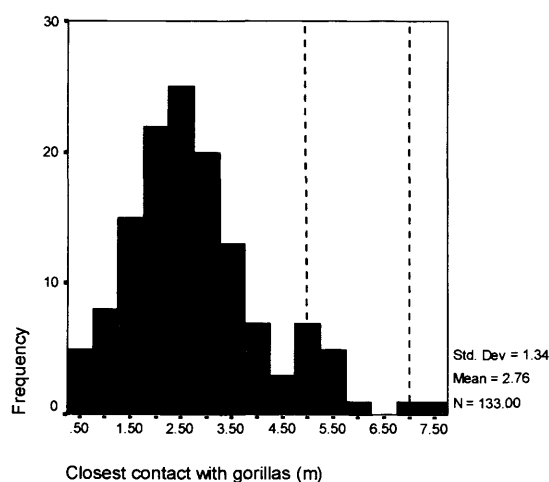


Figure 7.2: Histogram showing the frequency and proximity of closest contacts with gorillas for each independent tourist group. Dashed lines represent the old (5 m) and new (7 m) rules for closest allowable proximity during tracking

The mean closest distance between tourists and gorillas maintained for at least 15 minutes during the tracking hour was 4.85 m (\pm SD 2.01), which is significantly closer than allowable under the new distance rule of 7 m ($t = -12.272$, $df = 131$, $p < 0.001$). Closest

proximities were not the same across the three gorilla groups (ANOVA, $F_{2,130} = 4.787$, $p < 0.001$), and post-hoc Tukey tests revealed that contacts with the Rushegura group (R group) were on average significantly closer than those with the H group ($p = 0.014$; Figure 7.3).

There were no significant differences between other pairs of groups.

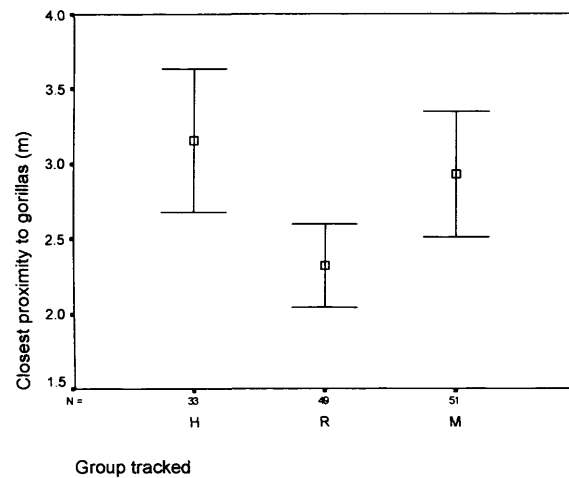


Figure 7.3: Plot showing the proximity of closest contacts with each habituated gorilla group. Data shown are mean values ± 2 standard errors. Mean values are: H = 3.15 m, R = 2.32 m, M = 2.93 m

7.4.2.2 How did close contacts occur?

Full data for modelling the relationship between contact initiator, gorilla age class and closest contact distance were returned for 361 tourists. Both test variables in the initial model were found to have significant explanatory power, and were therefore retained (AIC = 524.256, Table 7.4). Contacts initiated by gorillas were closer than those initiated by tourists, and contacts with juvenile gorillas closer than contacts with adults.

Table 7.4: Linear Mixed Effects model of closest contact distance between tourists and gorillas

Predictor	Coefficient	se	df	t	p
Age class	0.244	0.068	233	3.597	< 0.001
Contact initiator	0.214	0.059	233	3.607	< 0.001

After removing the two guides for whom data from less than 5 trips were available, it was found that there was no significant difference between guides in the closest proximity reached by tourists they were leading (ANOVA; $F_{12,110} = 1.321$, $p = 0.217$; Figure 7.4). The names of the guides have been coded as numbers to protect their anonymity.

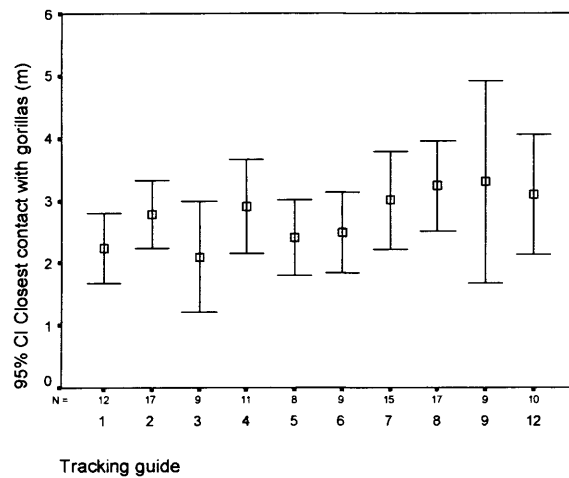


Figure 7.4: The mean and standard error of closest contacts for tourists visiting the gorillas with each tracking guide. Data are pooled within tourist tracking group to account for pseudo-replication

There was also no significant correlation between the size of the tip given to guides by tourists and how close they got to the gorillas ($r = 0.122$, $p = 0.166$, $n = 122$; Figure 7.5).

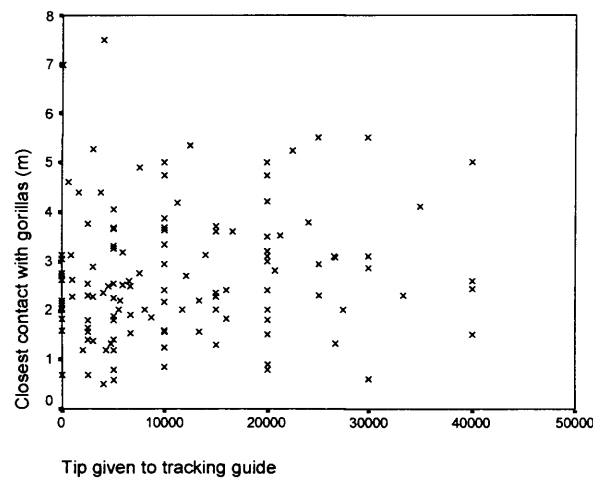


Figure 7.5: Scatter plot showing the mean tip given to the tracking guide by the interviewed members of each independent tracking group in the sample against the mean closest contact with gorillas which they experienced

7.4.2.3 How long did close contacts last?

Full data for modelling the relationship between contact initiator, gorilla age class and closest contact duration were returned for 361 tourists. Both test variables in the initial model were found to have significant explanatory power, and were therefore retained (AIC = 1395.760; Table 7.5). Contacts with adults lasted longer than with juveniles, and contacts initiated by gorillas were shorter than those initiated by tourists. There was a strong positive

correlation between the distance and duration of closest contacts ($r = 0.352$, $p = 0.000$, $n = 133$; Figure 7.6).

Table 7.5: Linear Mixed Effects model of the duration of closest contacts between tourists and gorillas

Predictor	Coefficient	se	df	t	p
Age class	0.904	0.228	233	3.961	< 0.001
Contact initiator	1.776	0.201	233	8.852	< 0.001

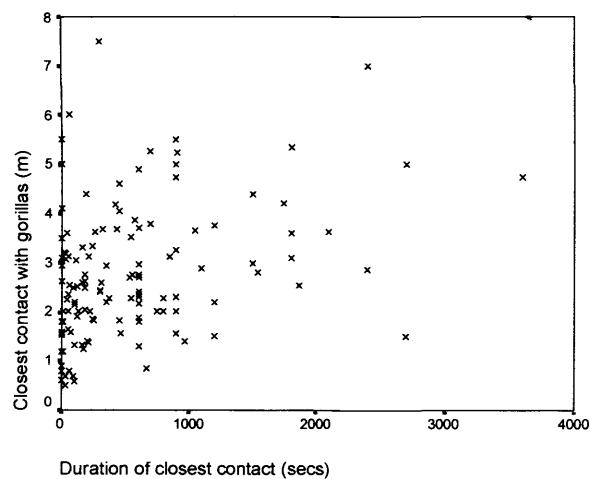


Figure 7.6: Scatter plot showing duration of closest contacts against distance of closest contacts

7.4.3 The health of gorilla tracking tourists

Of the 364 tourists for whom health data were collected, 137 (37.6%) had suffered from at least one symptom of disease during the previous 2 weeks, and 42 (11.5%) had suffered from at least one symptom during the 24 hours prior to the interview (during which time they had gone gorilla-tracking). 63 visitors had suffered from more than one symptom of disease in the past 2 weeks (Table 7.6), while 8 had suffered from more than one in the past 24 hours (Table 7.7)³⁹.

³⁹ It is worth noting that only tourists who had been tracking were interviewed. I am aware of at least 2 individuals during the study period who declared themselves sick and did not track. As a result of this action they effectively removed themselves from the sample

Table 7.6: The frequency and percentage of respondents who had suffered 0, 1, 2, 3, 4 or 5 symptoms of disease included in the questionnaire during the 2 weeks preceding the interview

Number of symptoms	Frequency	Percentage
0	226	62.1
1	75	20.6
2	35	9.6
3	22	6.0
4	5	1.4
5	1	0.3
Total	364	100

Table 7.7: The frequency and percentage of respondents who had suffered 0, 1, 2 or 3 symptoms of disease included in the questionnaire during the 24 hours preceding the interview

Number of symptoms	Frequency	Percentage
0	322	88.5
1	34	9.3
2	5	1.4
3	3	0.8
Total	364	100

Of the specific symptoms included in the questionnaire, running nose / cold was most commonly reported for the previous 2 weeks, with 57 of 364 tourists having suffered this symptom. Next was diarrhoea with 53 individuals and then sore throat with 33 (Table 7.8).

Table 7.8: The number of individuals answering yes when asked if they had suffered each symptom given during the last 24 hours or the last 2 weeks. The % of the total sample of 364 respondents is given in brackets

Symptom	Previous 2 weeks	Previous 24 hours
Aching joints	5 (1.4%)	0
Cough	19 (5.2%)	11 (3.0%)
Diarrhoea	53 (14.6%)	10 (2.7%)
Headache	29 (8.0%)	6 (1.6%)
High temperature / fever	9 (2.5%)	1 (0.3%)
Running nose / cold	57 (15.7%)	14 (3.8%)
Sore throat	33 (9.1%)	8 (2.2%)
Stomach ache	22 (6.0%)	0
Vomiting	9 (2.5%)	3 (0.8%)

Most tourists had fairly good vaccination coverage, apart from in the cases of influenza, where only 20.1% had an in-date vaccination, and rabies, where only 20.9% were covered. Just over half the sample, at 56.0%, had been vaccinated against tuberculosis at some point in their life (for full details see Table 7.9).

Table 7.9: The number and percentage of interviewed tourists who were vaccinated, not vaccinated, unsure or had suffered the disease for various diseases which are believed to be transmissible to gorillas

Disease	Definitely vaccinated	Definitely not vaccinated	Not sure	Had disease
Hepatitis A	333 (91.5%)	24 (6.6%)	4 (1.1%)	3 (0.8%)
Hepatitis B	220 (60.4%)	123 (33.8%)	21 (5.8%)	-----
Influenza	73 (20.1%)	290 (79.7%)	1 (0.3%)	-----
Measles	153 (42.0%)	14 (3.8%)	20 (5.5%)	177 (48.6%)
Polio	356 (97.8%)	6 (1.6%)	2 (0.5%)	-----
Rabies	76 (20.9%)	284 (78.0%)	4 (1.1%)	-----
Tetanus	351 (96.4%)	10 (2.7%)	3 (0.8%)	-----
Tuberculosis	204 (56.0%)	150 (41.2%)	10 (2.7%)	-----
Yellow fever	358 (98.4%)	6 (1.6%)	0	-----

Of all the tourists who were interviewed, 251, or 69.0%, already had visited or were planning to visit chimpanzees or gorillas at another site. Only 12 individuals (4.1%) were visiting gorillas at another site, usually Rwanda, and all of these were also visiting chimpanzees during their trip. 25 individuals were planning to visit chimpanzees more than once during their time in East Africa.

7.5 Discussion

7.5.1 Funds raised for conservation

Tourism at BINP clearly raises a very substantial sum of money for Uganda Wildlife Authority. Gorilla tracking permit sales alone raised in the order of \$1.5 million US per year at the prices in place during fieldwork, and this ignores additional income generated by park entry fees for tourists not visiting the gorillas, and the price of other activities such as forest walks and bird watching tours. Although no data regarding the cost of park management were available from UWA, it is clear that BINP was making a profit, and indeed that it acted as something of a 'cash-cow' for UWA in general (Adams & Infield, 2003). In this way BINP succeeded where many other parks around the world do not

(Walpole *et al.*, 2001). Less clear than the amount of revenue generated by BINP is what the money was used for. A small proportion was placed into the Tourism Revenue Sharing (TRS) fund for local communities living around the park, and the remainder went to UWA central office (Archabald & Naughton-Treves, 2001; the TRS is discussed in more detail in Chapters 2 and 5). UWA add this money to their budget for all activities around the country, and it has been argued that this may be used as an excuse by the government to reduce state funding for UWA (Adams & Infield, 2003). There may be some truth in this suggestion, but it remains clear that the revenue generated by tourism at BINP more than covers the costs of running the park, and is therefore of great significance for the conservation of the forest.

7.5.2 The risks of tourism

7.5.2.1 Events during tourist visits to gorillas

Previous studies of primate tourism in Uganda have demonstrated that humans visiting great apes are potential sources of infection (Adams *et al.*, 2001), but included no data on how close tourists got to these animals, information which is important for evaluating the risk of diseases being transmitted (Homsy, 1999; Woodford *et al.*, 2002). The data presented in this chapter fill that gap, and show that tourists at BINP got extremely close to gorillas. The minimum distance rule of 7 m was broken on a daily basis, and in fact only one of the 133 independent tourist groups sampled did not get closer than 7 m at any point during their visit. It is also clear that these were not fleeting encounters, because the mean of the closest distance maintained for at least 15 minutes was significantly less 7 m, demonstrating that the rules were being routinely ignored by gorilla tracking guides.

There are several factors which might explain why tourists got too close to gorillas. First, it has been suggested that excessively close encounters occur because gorillas are over-habituated and actually approach tourists, particularly in the case of inquisitive juvenile animals (Mudakikwa *et al.*, 2001; Tutin & Vedder, 2001). This hypothesis is supported by the results of this study, because contacts initiated by gorillas were closer than those initiated by tourists, and contacts with juvenile individuals were closer than those with adults. Second, as its name suggests, Bwindi Impenetrable Forest is very dense, and in many cases it is impossible to get a clear view of the gorillas from more than 7 m away. Guides are under pressure to get tourists close to give them a good viewing experience (e.g.

Valentine *et al.*, 2004), so this might encourage them to allow tourists to get closer so that they can see the gorillas clearly. Third, the steep topography of the park and the dense foliage can make it difficult to retreat should a gorilla approach the group, and this limits guides' ability to control their visitors. Finally, the gorillas within their group are often dispersed over a wide area, and tourists can find themselves surrounded by gorillas. It is not possible under these circumstances to back away from one individual without inadvertently approaching another, and this makes getting to within 7 m unavoidable.

The above constraints on guides' ability to prevent tourists getting too close to gorillas show that in some situations it is impossible to stop an excessively close encounter from occurring. However, they can only partly explain the results of this chapter. Whilst the very closest encounters were initiated by and involved juvenile gorillas as expected, even those which were initiated by tourists/guides and involved adult gorillas were on average far closer than the allowable distance. Further to this, the duration of the close contacts suggests that they were not just unavoidable fleeting encounters with a passing gorilla, but very often lasted a lot longer than that, including one case of a tourist reporting that they had been less than 1 m from a gorilla for 10 minutes. The duration data are only estimates, but this is clearly too long for an encounter which should never have happened in the first place, and guides must be held at least partly responsible for such events. In the defence of guides, no evidence was found for differences between them or for their allowing rules to be broken in pursuit of tips.

7.5.2.2 The health status of gorilla tracking tourists

Many of the tourists interviewed for this study had suffered recent symptoms of infectious disease, a finding similar to that of Adams *et al.* (2001) in their study of tourists visiting chimpanzees at Kibale National Park. Even when the period of time for symptom recall was reduced from six months to just 2 weeks, a considerable proportion of respondents reported health problems. Further to this, many visitors did not have current vaccinations against diseases like influenza or TB which were recommended by the Homsy report (1999), and required by Ngamba Island chimpanzee sanctuary (see Appendix F). Taken together these results suggest the possibility that some individuals suffering from infectious diseases to which gorillas are susceptible were entering BINP. The finding that almost 70%

of possibly infectious individuals also visited gorillas or chimpanzees at another site only adds to the level of concern.

There are two main factors which might explain why potentially infectious tourists were able to go gorilla tracking. First, international tourists tend to be less healthy whilst travelling than they are when in their home country, as a result of fatigue, exotic pathogens against which they have no immunity, and other factors such as unfamiliar diet (Hill, 2000b). Second, the system in place for identifying sick tourists and preventing them from gorilla tracking was clearly not working. Possible approaches to improving this situation are discussed in the following subsection.

7.5.2.3 Recommendations to mitigate the risk of disease transmission

The tourists interviewed for this study got closer to gorillas than the rules allow, stayed there for too long, and showed signs of possibly being infectious. All of these factors increase the risk of diseases being transmitted to gorillas, and are of concern. In some cases, very long close contacts with gorillas were clearly avoidable. Making sure these don't happen in future requires action to educate tourists and re-train guides, both of which should be looked at as areas of priority for UWA and the tour operators who bring visitors to the park. However, given that many close contacts are initiated by gorillas and are therefore unavoidable for tourists, more focus should be given to preventing sick tourists from entering the forest. There are three ways in which this could be achieved, and they can be divided on a temporal basis into those relevant to the time before arrival at BINP, those relevant during the stay at BINP and those relevant during tracking. These are considered in turn below.

Before beginning their trip to Uganda, tourists could be required to provide evidence of vaccination against certain diseases. It is somewhat bizarre that at present Ngamba Island, home to a population of non-wild chimpanzees of arguably zero conservation value, has far stricter vaccination rules than Bwindi, home to half the world population of critically endangered mountain gorillas. Requiring tourists to present evidence of in-date vaccinations against all possible risk diseases would seem unnecessary, because this would be very inconvenient and many of the diseases (such as TB) are very unlikely to be found in the predominantly wealthy and western tourist population. However, it is conceivable

that a tourist might have influenza, and requiring all visitors to have a current influenza vaccination would seem to be a relatively straightforward recommendation which would reduce the risk of disease transmission. This recommendation was first suggested by Homsy (1999), and is supported by the results presented here.

During the stay at BINP tourists could be required to do two things. First, they could be obliged to spend a full 24 hours at the park prior to tracking, and to attend a compulsory briefing session the afternoon prior to their visit to the gorillas. This would give staff the opportunity to give a full explanation of the risks involved in tracking, and to put more pressure on visitors to self-report if they were feeling unwell. It would also have other spin-off benefits such as enabling visitors to meet their fellow tracking group members and giving UWA the chance to sell more souvenirs. Second, tourists could be made to undergo some simple medical screening before being allowed to enter the park. This could include having their temperature taken, their chest listened to and their throat examined. These tests could be carried out by any individual with basic medical training, such as a nurse. Ensuring objectivity and compliance might be complicated, but on-site screening would appear to be an idea worth revisiting for policy makers.

Finally, during tracking itself, tourists could be required to wear surgical face masks. These could be donned directly before contact with the gorillas begins, when visitors have had a chance to recover their breath from the climb to reach the group, and then removed for safe disposal following the end of the hour with the gorillas. Surgical masks, when dry, reduce considerably the risk of aerosol disease transmission (Bannister, 2000). A further benefit of masks is that they might reinforce to tourists the serious nature of the threat which they pose, something which at present many visitors seem to under-appreciate.

7.6 Conclusions

Tourism is a vital component of gorilla conservation strategy because of the revenue which it generates for park management. There are alternative sources of funding, but losing the revenue from tourism would be a major problem for the implementation of conservation activities at BINP. However, at present tourists likely to be infectious get too close to gorillas, and there is a risk that a disease will be transmitted to them with potentially

devastating consequences. Overall, it would seem that the positive direct impacts of tourism for conservation at BINP probably outweigh the negative, but this balance could be made yet more positive by implementing some simple recommendations to reduce the risk of disease transmission. These include retraining guides in rule enforcement, improving tourist health screening and introducing barriers to transmission such as surgical masks. If action is not taken, there is a risk, however small, that the tourists who believe they are supporting gorilla conservation will unwittingly contribute to their further decline.

Chapter 8: The role of tourists in determining the economic and environmental impacts of tourism

8.1 Chapter summary

The four previous chapters have explored the socioeconomic and environmental impacts of tourism at BINP under Links 1, 2 & 3 of the theoretical framework for ecotourism (Ross & Wall, 1999; Chapter 1). In so doing they have disaggregated the impacts of tourism for different sections of the study population and the environment, but have treated the tourist population as homogeneous. This chapter takes the analysis a step further, by exploring differences between tourists visiting BINP in terms of their impact on the local economy and the risks they pose to gorillas. It begins by developing several different techniques for classifying tourists, including their personal characteristics, the details of their trip to BINP, and the relative importance to them of different motivating factors for visiting the area. The relationships between these classifying variables and various measures of socioeconomic and environmental impact measured in the previous chapters are then explored. Finally, the results are used to make recommendations about the ideal tourist population to be encouraged at BINP in the future.

8.2 Introduction

It has long been recognised that tourist populations are heterogeneous, and considerable effort has been invested by researchers into classifying tourists into groups (Chapter 1). Numerous variables can be used to distinguish between these groups, including age, wealth, previous travel experience, risk aversion, education and motivation to travel (Lepp & Gibson, 2003; Kerstetter *et al.*, 2004). It is also known that tourists can differ substantially in the impacts which they have at the destination (Chapter 1). For example, Stoeckl *et al.* (2006) have shown that tourists on angling holidays Queensland, Australia, differ in their impacts on both the local economy and local fish stocks. Similarly, ‘backpackers’ can in some cases have more positive economic impacts for locally-owned businesses than ‘high-end’ visitors (Hampton, 1998; Scheyvens, 2002a). Unfortunately, despite considerable research into these issues, very few authors have attempted to make the link between tourist classification variables and the different impacts which tourists have (Page & Dowling, 2002). This is a particular problem in the case of ecotourism research, because ecotourism is defined by its impacts (Chapter 1), meaning that in the absence of information on the

impacts of individual tourists, identifying ecotourists is impossible (Hvenegaard, 2002). Research to address this failing should now be seen as a priority.

Whilst site managers and policy makers need information on the impacts of individual tourists, they must also consider the mix of tourists coming to a destination, and how this changes over time. Is it best to have just one type of tourist, or will impact goals be better met by a range of visitors, either at any one time, or at different times of year? National level policy makers in the developing world frequently favour high-end visitors because of their perceived superior economic impacts (e.g. Uganda Ministry of Tourism, 2003), but considerable research now suggests that a broad mix of tourists is a better option (e.g. Loon & Polakow, 2001; Scheyvens, 2002b). This is because different tourists can deliver complementary benefits (and costs) to different sectors of the local economy and environment (Hvenegaard & Dearden, 1998a), and because different tourists respond differently to risk, meaning that having a diverse tourist population buffers destinations against future crashes in specific segments of the industry (Lepp & Gibson, 2003). Recent research also highlights the need to consider seasonality, including not just absolute visitor numbers but also the composition of the visitor population at different times of the year (Baum, 2001; Jang, 2004).

The tourism industry in the study area at BINP offers an ideal opportunity to investigate differences between tourists and the impacts that they have. First, the lack of other attractions in the area makes tourism at BINP a closed system in which all impacts of the industry can be attributed to visitors staying within the study area (Chapter 2), second, the tourists visiting the area are few in number and therefore amenable to research, and third, the tourists are very diverse in terms of the type of holiday they are on and the type of accommodation they use (Chapter 2). We might therefore expect several distinct subgroups of tourists to be present in the study area, and for them to differ substantially in the impacts that they have. This chapter investigates these issues by addressing the following research aims at the study site:

1. To investigate the characteristics of gorilla-tracking tourists in terms of their personal details, trip details, and motivation to visit BINP

2. To investigate the relationship between these characteristics and measures of socioeconomic and environmental impacts for each tourist
3. To investigate temporal differences in the composition of the tourist population
4. To make recommendations about the best mix of tourists for delivering ecotourism in the future

8.3 Methods

8.3.1 Source data

The majority of data used in this chapter come from the tourist survey. Full details of how this was carried out, including the sampling strategy adopted, can be found in Chapter 3. Other data used were drawn from the tourist registration survey and the previous four data chapters, including leakage by each tour camp from Chapter 4, socioeconomic impact data from Chapter 5, cost and attitude data from Chapter 6 and gorilla proximity and tourist health data from Chapter 7. Full details of how these data were used here are given in the following sections.

8.3.2 Classifying tourists

Tourists were classified into groups for analysis using three different methods. These were: classification by personal characteristics, classification by trip details, and classification by motivation to visit BINP. Details of each method are given below.

8.3.2.1 Classification by age, gender and nationality

Using data collected from the UWA registration records, the entire tourist population from the 24th of June 2003 to the 24th of November 2004 was described in terms of age, gender, nationality and region of origin. Region of origin was divided into Europe, Africa, North America, Australasia, and Other (including Japan). These variables were then used when analysing differences between interviewed tourists in terms of their social, economic and environmental impacts, as described below in Sections 8.3.3 and 8.3.4

8.3.2.2 Classification by trip characteristics

The tourist registration survey included questions regarding the details of the respondent's visit to Uganda. These were: which tour camp they were staying in at BINP, and how many nights in total they were spending at BINP. The former data were collected by the UWA

Information Clerks every day after the 8th February 2004, and the latter were collected by me when I met tourists in the morning before tracking during the tourist survey periods (see Chapter 3 for dates). Other trip characteristics used to classify tourists were included in the interview survey. These were: how many tourists were in their gorilla tracking group, and what type of trip they were on. Response categories for the latter question were developed following a pilot study and general observations of what kind of trip tourists took. The categories used were independent trips (not booked through a Tour Operator; TO), scheduled tours (operating to a fixed timetable and usually in medium to large groups) and tailor made tours (where the itinerary is determined by the tourist and there are usually no strangers in the group).

8.3.2.3 Classification by motivation to visit BINP

The final tool used to classify tourists was based on what had motivated them to visit BINP. This was assessed using a series of questions which formed part of the tourist interview survey. Respondents were asked to give a rating from 1-9 of the importance of various possible motivating factors for visiting Bwindi. These were divided into three groups of five, with the first five intended to measure the significance of aspects of the natural environment ('Environment') as motivating factors, the second five aspects of local culture ('Culture'), and the final five the importance of rest, relaxation, and taking a break from normal life ('Escapism', Table 8.1). These three dimensions were selected *a priori* based on discussions with tourists during a pilot study which suggested that each played an important role in motivation to visit BINP. Questions within each dimension were developed by me on the basis of discussions with tourists and my personal interpretation of motivating factors. A score of 1 meant that an item was considered something to be avoided, 5 was a neutral response, and 9 meant that the item was essential to their decision to visit the area.

Table 8.1: The factors tourists were asked to rate in terms of their importance to their trip to BINP

Environment	Culture	Escapism
Landscape / Scenery	Trying new foods	Staying somewhere clean
Seeing new species	Meeting local people	Staying somewhere luxurious
Seeing rare / endangered species	Learning about how others live	Not having to make decisions
Visiting natural habitat	Experiencing a different culture	Escaping stress
Physical challenge	Taking risks	Physical rest

The items detailed in Table 8.1 were designed to measure three separate dimensions of motivation to travel to BINP which could then be used to look for relationships between motivation to visit and environmental or socioeconomic impact. To make this analysis possible, a single mean score had to be calculated for each tourist in each attitude dimension. However, first it was necessary to ensure that each question in each dimension was actually measuring the same underlying motivation. Consistency was assessed using reliability analysis in SPSS Version 10.1, a two-step procedure which evaluates the stability and consistency of statements (Parasuraman *et al.*, 1988; Kuvan & Akan, 2005). In the first step, the Item-Total Correlation (ITC) of statements in each dimension was calculated, and statements which did not score an ITC of 0.30 or above were removed (following the method used by Kuvan & Akan, 2005). In the second step, the Cronbach Alpha Coefficient (CAC) was calculated for each dimension (after statements failing step 1 had been removed), and the dimension was accepted for analysis if the CAC was greater than 0.6, as is generally recommended (Nunnally & Bernstein, 1994; Winter *et al.*, 2005). Once acceptable dimensions had been identified in this way, mean scores were taken for all questions remaining within each dimension, and used for further analysis.

During initial analysis of attitude scores an attempt was made to divide tourists into clusters based on their attitude scores in each dimension using Principle Components Analysis (PCA) followed by K-means Clustering in SPSS 10.1. However, it was found that no distinguishable clusters were produced, and so it was decided not to pursue a clustering approach as it would seem to result in over-classification of the data to an unjustifiable extent. Instead, the separate scores for each dimension were retained and used individually for further analysis.

8.3.3 Measures of socioeconomic and environmental impact

In order to evaluate the differences between tourists (as classified using the methods described above) in their socioeconomic and environmental impacts, it was necessary to develop a series of indicator variables which measured impacts in these dimensions. These were drawn from the results of the previous four chapters, with the variables considered to be most relevant as measures of impact selected in each case. These variables and how they were measured are described in the following two sub-sections.

8.3.3.1 Measures of socioeconomic impact

The variables selected as quantitative measures of socioeconomic impact were both economic impact variables drawn from the results of Chapter 4 and from the tourist survey. These were, for each tourist, the total amount spent in the study area ('total spend') and the estimated total spend retained in the local economy ('total retained'). These variables were selected because they were amenable to statistical analysis (see Section 8.3.4), and because they measured the economic impacts of tourists on the local economy. Total spend was calculated as the sum of spending by each tourist on their accommodation, shopping in the study area, UWA activities (excluding gorilla tracking permits), the village walk, handicrafts, tips and donations (see Chapter 4 for full details of how these were measured). Total retained spending was calculated by deducting leaked revenue for each tourist from total spend, where leaked revenue was calculated by multiplying the spending on accommodation by the percentage leakage rate calculated for the relevant tour camp, using the method described in Chapter 4.

8.3.3.2 Measures of environmental impact

The variables selected as measures of environmental impact were drawn from the results of Chapter 7, and were all measures of the disease threat tourists posed to gorillas. These were two measures of proximity to gorillas during the tracking visit (closest proximity and closest proximity maintained for at least 15 minutes), and two measures of tourist health (had the tourist suffered risk symptoms during the past 2 weeks (yes/no) or the past 24 hours (yes/no)). For full details of how these data were collected, see Chapter 7.

8.3.4 Modelling links between tourist classification variables and impact variables

The degree to which the quantified measures of tourism impacts could be explained by each tourist classification variable was tested using Linear Mixed Models (LMMs) and Generalised Linear Mixed Models (GLMMs). Full details of the rationale for mixed modelling are given in Chapter 3. GLMMs were used where the response variable was binary, and LMMs where the response variable was continuous. The predictor and response variables used for the socioeconomic impact variables are shown in Table 8.2, and for the environmental impact variables in Table 8.3. Nights at BINP and the camp tourists were staying in were not included as predictor variables for the gorilla proximity analysis because it was not considered possible that there could be any relationship between them.

The gorilla group visited was not modelled as a random effect for analysis of tourist health for the same reason. Both socioeconomic response variables tested and both gorilla contact variables tested were log transformed to meet the model assumption of normality. All LMMs were constructed using R 2.1.1 (function 'lme', package 'nlme'; R Development Core Team, 2006), and all GLMMs were constructed using R 2.3.0 (function 'lmer', package 'lme4'; R Development Core Team, 2006).

Table 8.2: Response variables and fixed and random explanatory variables used for modelling the relationship between tourist classification variables and socioeconomic impacts

Fixed effects	Random effects	Response variables
Age	Tourist group no.	Total spend
Gender		Total retained
Trip type		
Nights at BINP		
Camp at BINP		
Mean environmental motivation score		
Mean cultural motivation score		
Mean escapism motivation score		

Table 8.3: Response variables and fixed and random explanatory variables used for modelling the relationship between tourist classification variables and environmental impacts

Fixed effects	Random effects	Response variables
Age	Tourist group no.	Closest contact with gorillas
Gender	Gorilla group no. †	Closest contact lasting at least 15 mins
Trip type		Symptoms of risk disease in last 2 weeks?
Nights at BINP*		Symptoms of risk disease in last 24 hours?
Camp at BINP*		
Mean environmental motivation score		
Mean cultural motivation score		
Mean escapism motivation score		

* These variables were not used when modelling response variables involving gorilla contact proximity

† Gorilla group was not fitted as a random effect for response variables involving tourist disease symptoms

To find the best model in each case a Minimum Adequate Modelling (MAM) approach was taken. To carry out the MAM process, an initial maximal model was generated in each case which included all the candidate explanatory terms. This model was then repeatedly simplified by removing terms which did not significantly improve it, until the model with

the lowest Akaike Information Criterion (AIC) was found. Because the response variable in each GLMM was categorical and in each LMM was continuous, different methods were used in each case to determine the degree to which terms contributed to the quality of each model. For GLMMs the contribution of each term was determined by comparing the deviance of the model with and without each term. This gives a χ^2 statistic from which a p value can be derived from the χ^2 distribution. For LMMs the significance of each term within the model was found by performing ANOVA in R on the model at each stage. This gives F ratios and p values for each term in the model. In both cases, if any term in a model had a p value greater than 0.05, the term with the highest p value was removed, and the process repeated. These approaches were preferred to taking test statistics directly from the model output because they returned single test statistics and p values for each term in the model (including categorical variables with numerous levels), rather than separate statistics for each factor level in the model, making it possible to establish the overall contribution of each term to the model rather than the significance of different levels within each term⁴⁰.

For every final model, coefficients showing the direction of the effect are reported for each variable which was either continuous, categorical but with only two levels (e.g. gender), or ordinal (e.g. wealth rank, where the number assigned to each rank has meaning). In every case respondents were only included for analysis if data were available for them in every variable being tested. This reduced the sample size considerably, as in some cases full tourist spending data were not available, and because some questions were added to the tourist questionnaire during fieldwork. Full details of sample size are given with each analysis in the results section below.

8.3.5 *The role of gorilla tracking group size in determining contact proximity*

The relationship between the number of tourists in tracking groups and how close they got to gorillas was analysed separately from other tourist classification variables. It was decided to do this because there was very little variation in group size, with almost all tracking groups having the full complement of 6 individuals, which made it difficult for mixed models including group size to resolve. To analyse this variable the mean closest and

⁴⁰ The approach used to calculate significance in LMMs here was not taken in Chapter 7 because none of the explanatory variables used there were categorical, meaning there was no need to use ANOVA to return significance values for entire terms rather than levels within terms

15 minute proximity distances for all tourists interviewed from each tracking group were calculated, and these were then divided into those from groups of six tourists and those from groups of fewer than six tourists. A *t* test was then carried out in each case to test the null hypothesis that the mean distance reached would be the same for both group size categories.

8.3.6 Temporal differences in the composition of the tourist population at BINP

Seasonality in tourism at the study area was measured in several ways. First, to measure seasonal variation in the number of tourists gorilla tracking, the absolute number of tourists per month during the year beginning November 1st 2003 was taken from the UWA registration records. This year was selected as it matched the study year for leakage analysis (see Chapter 4). Second, the relationship between the age of tourists tracking gorillas and the month of the year was analysed for the same period using ANOVA. Finally, the relationship between the number of tourists staying in different classes of camp and the month of the year was analysed for the period March 2004 to October 2004 using χ^2 tests. This shorter period was used because UWA did not start collecting tourist accommodation data until mid February 2004. Camps were classified into different classes on the basis of their price and my personal judgement of their quality. Gorilla Forest Camp, Mantana camp and Volcanoes camp were classified as ‘high-end’, Lake Kitandara and African Pearl Safaris camps were classified as ‘mid-range’, and Bwindi View Canteen and Buhoma Community Rest Camp were classified as ‘budget’.

8.4 Results

8.4.1 Classification by age, gender and nationality

Age data were returned from the registration survey for 6235 tourists. The mean tourist age was $40.69 \pm \text{SD } 13.39$ with a range from 15 to 88. Gender data were returned from the registration survey for 7185 tourists, of whom 3597 (50.1%) were male, and 3588 (49.9%) were female. Nationality data were returned for 7239 tourists. The most commonly represented nationalities in the tourist population were American (1868 or 25.7%), British (1817 or 25.0%), and Dutch (909 or 12.5%). Only 90 (or 1.2%) of the gorilla-trackers were Ugandan citizens. By far the most strongly represented continent of origin was Europe, with 4256 visitors during the study period (Table 8.4).

Table 8.4: The continent of origin of tourists registered for gorilla tracking

	Frequency	Percentage
Europe	4256	58.8
North America	2154	29.8
Australasia	524	7.2
Africa	280	3.9
Other	25	0.3
Total	7239	100.0

8.4.2 Classification by trip characteristics

Data on accommodation at BINP were returned for 4326 tourists in the registration survey. The most popular tour camp was the Buhoma Community Rest Camp (BCRC; 1455 individuals or 33.6%; Table 8.5).

Table 8.5: The number and percentage of registered tourists staying at each camp at BINP

	Frequency	Percentage
Gorilla Forest Camp	1060	24.5
Mantana Safaris	195	4.5
Volcanoes Safaris	425	9.8
Lake Kitandara	449	10.5
African Pearl Safaris	421	9.7
Bwindi View Canteen	321	7.4
Buhoma Community Rest Camp	1455	33.6
Total	4326	100.0

Data on the number of nights stayed at BINP were returned for 1110 registered tourists. The mean total number of nights stayed at BINP was $2.49 \pm \text{SD } 0.847$. Data on the type of trip taken by tourists were returned for 242 respondents from the interview survey. The most common trip type in the sample was scheduled tours (107 individuals or 44.2%; Table 8.6).

Table 8.6: The number and percentage of interviewed tourists on different types of trip to BINP

	Frequency	Percentage
Independent	60	24.8
Scheduled tour	107	44.2
Tailor made tour	75	31.0
Total	242	100.0

8.4.3 Classification by motivation to visit BINP

Using the reliability analysis criteria for exclusion (described in Section 8.3.2.3), four motivation factors were removed. These were ‘landscape / scenery’ and ‘physical challenge’ in the environment dimension, ‘taking risks’ in the culture dimension, and ‘not having to make decisions’ in the escapism dimension. After the elimination of these factors, 11 remained in the study. The item-total correlation values of the retained motivation factors in each attitude dimension and the overall Cronbach Alpha Coefficients for each dimension are presented in Table 8.7.

Table 8.7: Cronbach Alpha Coefficients (CAC) for each motivating factor dimension, and Item Total Correlations, Means and Standard Deviations (SD) for each individual motivating factor. N = 236

Dimensions and motivating factors	Item Total Correlation	Mean	SD
<i>Environment dimension (CAC = 0.6235)</i>			
Seeing new species	0.4792	8.1250	1.3260
Seeing rare / endangered species	0.4680	8.2625	1.2847
Visiting natural habitat	0.3607	8.1458	1.0783
<i>Cultural dimension (CAC = 0.7285)</i>			
Trying new foods	0.4657	5.3947	2.2018
Meeting local people	0.7054	7.7233	1.5939
Learning about how others live	0.6063	7.5351	1.5117
Experiencing a different culture	0.3794	7.4561	1.8184
<i>Escapism dimension (CAC = 0.6201)</i>			
Staying somewhere clean	0.4103	6.4407	1.8150
Staying somewhere luxurious	0.5308	3.8051	2.2323
Escaping stress	0.2984	6.4703	2.2680
Physical rest	0.3834	4.6780	2.2892

8.4.4 The socioeconomic impacts of different tourists

Full data for modelling the response variable ‘total spend’ of tourists in the study area were available for 151 respondents. The best model to explain ‘total spend’ included respondent age, gender, trip type, nights at BINP and camp as explanatory variables (AIC = - 150.67; Table 8.8). The model shows that older tourists, women, and those staying more nights at BINP spent more money in total in the area. The categorical variables ‘trip type’ and ‘camp’ were also significant in the model (Figure 8.1)

Table 8.8: Linear Mixed Effects Model of variables explaining total spending at BINP by tourists. Only explanatory variables found to be significant in the minimal model are reported. N = 151

Term	Coefficient	df	F	p
Age	0.0010	1, 69	73.07	< 0.001
Gender	- 0.0196	1, 69	11.33	0.001
Trip type	-----	2, 70	113.55	< 0.001
Nights at BINP	0.1782	1, 69	101.75	< 0.001
Camp	-----	6, 70	53.62	< 0.001

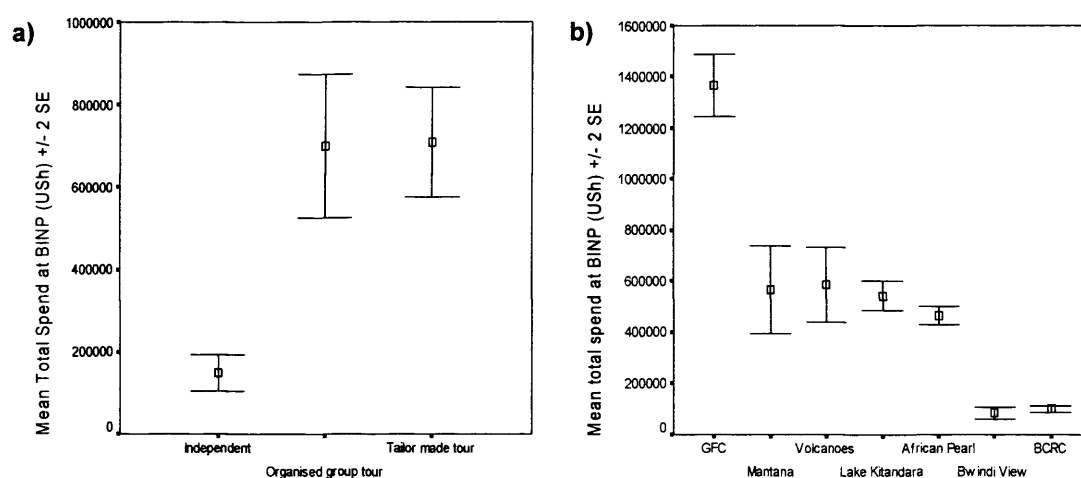


Figure 8.1: Total spend at BINP by tourists' **a)** trip type and **b)** tour camp. N = 151

The best model to explain the variable 'total retained' included respondent age, gender, the type of trip they were on, their region of origin and the number of nights they were staying at BINP (AIC = - 26.39; Table 8.9). The model shows that more money was retained in the study area from older tourists, from women and from those who stayed at BINP for longer. The categorical variables trip type and region of origin were also significant in the model (Figure 8.2).

Table 8.9: Linear Mixed Effects Model of variables explaining total retained spending at BINP by tourists. Only explanatory variables found to be significant in the minimal model are reported. N = 151

Term	Coefficient	df	F	p
Age	0.0006	1, 65	5.34	0.024
Gender	- 0.0358	1, 65	4.21	0.044
Trip type	-----	2, 76	4.88	0.010
Region of origin	-----	4, 65	6.53	< 0.001
Nights at BINP	0.1698	1, 65	27.71	< 0.001

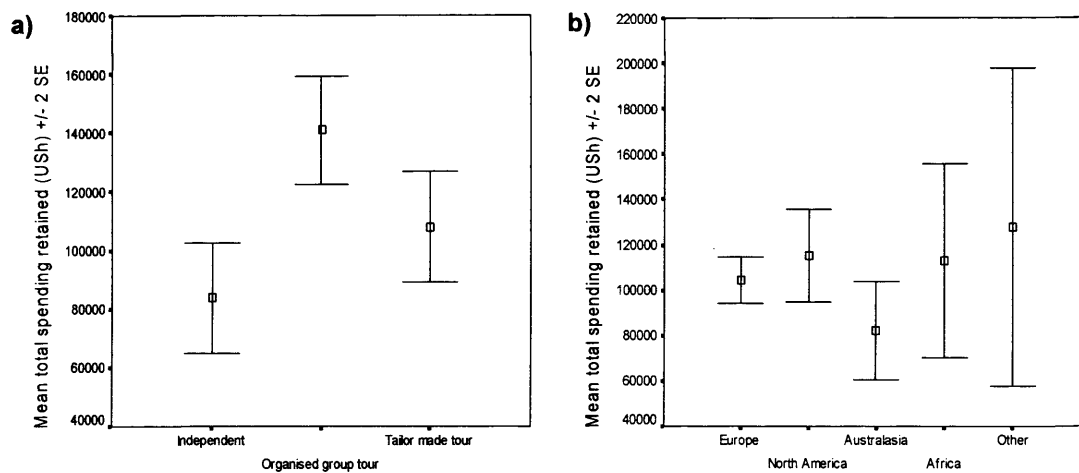


Figure 8.2: Total retained spend at BINP (US\$) by tourists' **a)** trip type and **b)** region of origin. N = 151

8.4.5 The environmental impacts of different tourists

Full data for analysing links between tourist characteristics and gorilla contact proximity were available for 223 respondents. The best model to explain the variable 'closest contact with gorillas' included only respondent age (AIC = - 238.38; Table 8.10; Figure 8.3). The model shows that younger tourists got closer to gorillas.

Table 8.10: Linear Mixed Effects Model of variables explaining closest contact distance between gorillas and tourists. Only explanatory variables found to be significant in the minimal model are reported. N = 223

Term	Coefficient	df	F	p
Age	0.0022	1, 112	9.20	0.003

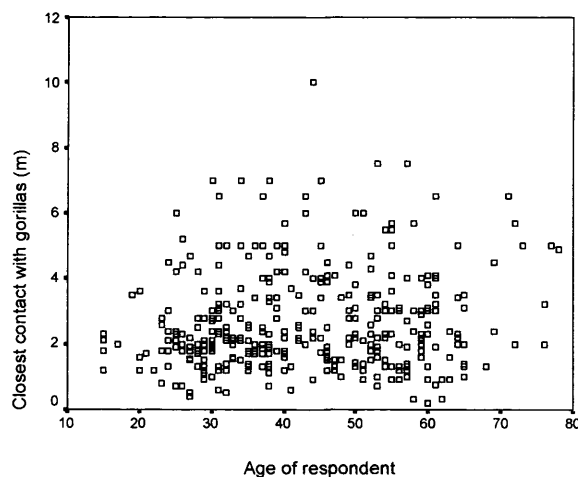


Figure 8.3: Scatter plot showing closest contact with gorillas (m) against respondent age. N = 223

The best model to explain the variable ‘closest contact lasting at least 15 minutes’ included only the categorical variable trip type (AIC = - 176.78; Table 8.11; Figure 8.4).

Table 8.11: Linear Mixed Effects Model of variables explaining closest contact distance between gorillas and tourists maintained for at least 15 minutes. Only explanatory variables found to be significant in the minimal model are reported. N = 223

Term	Coefficient	<i>df</i>	<i>F</i>	<i>p</i>
Triptype	-----	2, 104	3.93	0.023

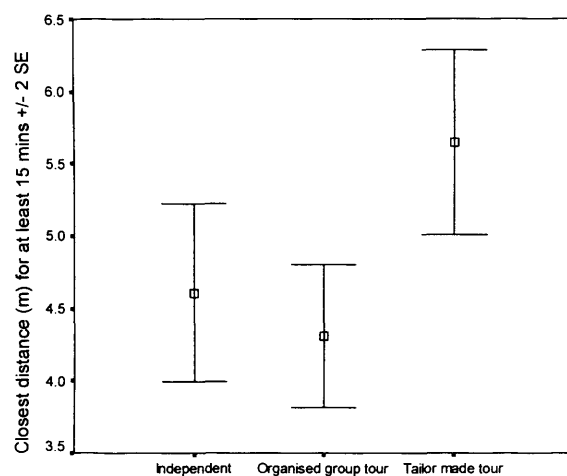


Figure 8.4: Closest distance (m) to gorillas maintained for at least 15 mins by tourist trip type N = 223

Full data for analysing links between tourist characteristics and tourist health were available for 225 respondents. The best model to explain the variable ‘have you had a symptom of risk disease in the last 2 weeks?’ included only respondent age (AIC = 295.66; Table 8.12; Figure 8.5). The model shows that younger tourists were more likely to have had a disease symptom.

Table 8.12: Generalised Linear Mixed Effects Model of variables explaining tourist symptoms of disease during 2 weeks before tracking. Only explanatory variables found to be significant in the minimal model are reported. N = 225

Term	Coefficient	<i>df</i>	χ^2	<i>p</i>
Age	- 0.0300	1	6.826	0.009

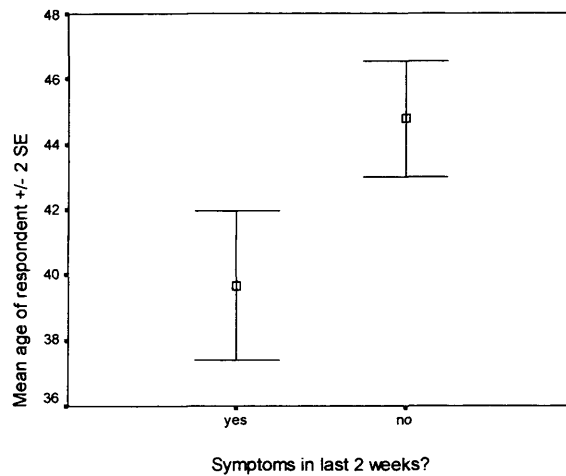


Figure 8.5: Mean age of tourists by presence / absence of disease symptoms in 2 weeks before tracking. N = 225

The best model to explain the variable ‘have you had a symptom of risk disease in the last 24 hours?’ included respondent age and nights at BINP (AIC = 168.22; Table 8.13). The model shows that younger tourists and those staying at BINP for longer were more likely to have had a disease symptom.

Table 8.13: Generalised Linear Mixed Effects Model of variables explaining tourist symptoms of disease during 24 hours before tracking. Only explanatory variables found to be significant in the minimal model are reported. N = 225

Term	Coefficient	df	χ^2	p
Age	- 0.0370	1	4.264	0.039
Nights at BINP	0.362	1	13.608	< 0.001

8.4.6 The role of gorilla tracking group size in determining contact proximity

Closest contacts with gorillas were on average closer for tourist groups of six than for groups of less than six, but the difference was not significant (6 mean = 2.71 m, < 6 mean = 3.02 m, $t_{112} = 1.084$, $p = 0.281$). For mean closest contact maintained for at least 15 minutes, groups of six did get significantly closer to the gorillas than groups of less than six (6 mean = 4.66 m, < 6 mean = 5.52 m, $t_{111} = 2.152$, $p = 0.034$; Figure 8.6).

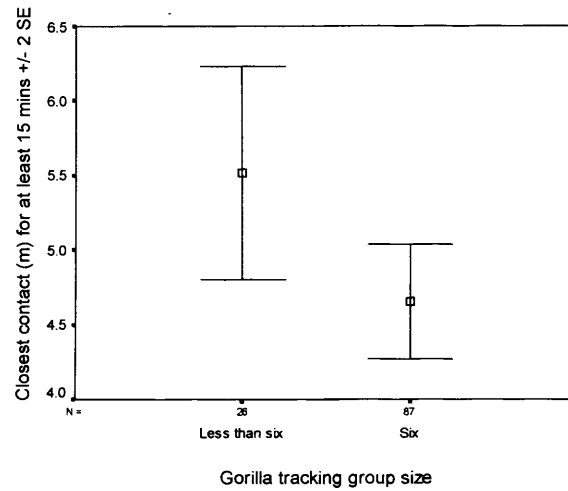


Figure 8.6: Mean closest contact with gorillas maintained for at least 15 mins by tourist group size. N = 113

8.4.7 Temporal differences in the composition of the tourist population at BINP

The mean number of tourists gorilla tracking each month during the year beginning 1st November 2003 was 427.75. The maximum in any month was 526 (in August 2004), and the minimum was 286 (in April 2004; Figure 8.7).

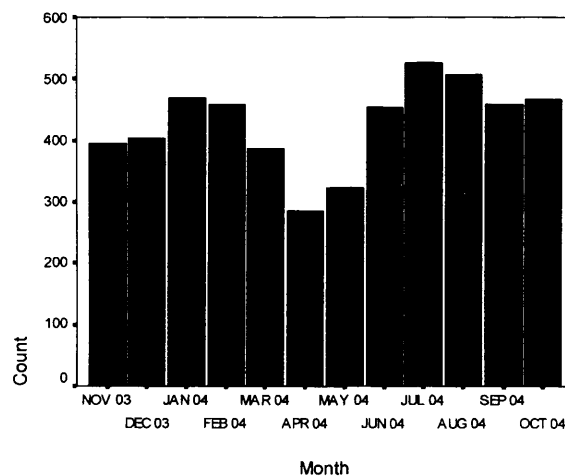


Figure 8.7: The number of tourists tracking gorillas each month in the year beginning 1/11/03

There was significantly more variation in the age of tourists between months than within months during the study year (ANOVA; $F_{11, 4162} = 8.911, p < 0.001$; Figure 8.8).

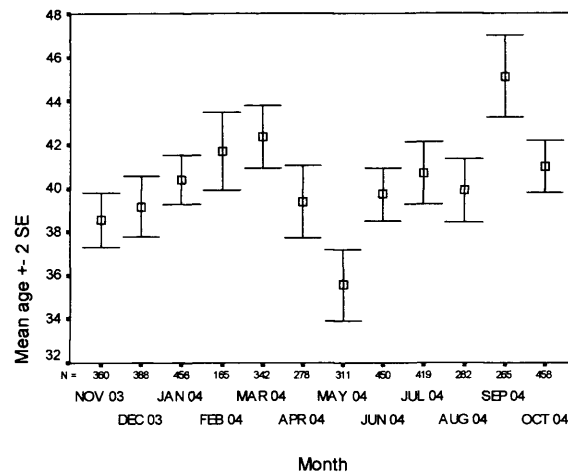


Figure 8.8: The age of tourists tracking gorillas each month in the year beginning 1/11/03

The distribution of tourists between budget, mid-range and high end camps was not consistent across months between March and October 2004 ($\chi^2 = 123.66$, $df = 14$, $p < 0.001$; Figure 8.9).

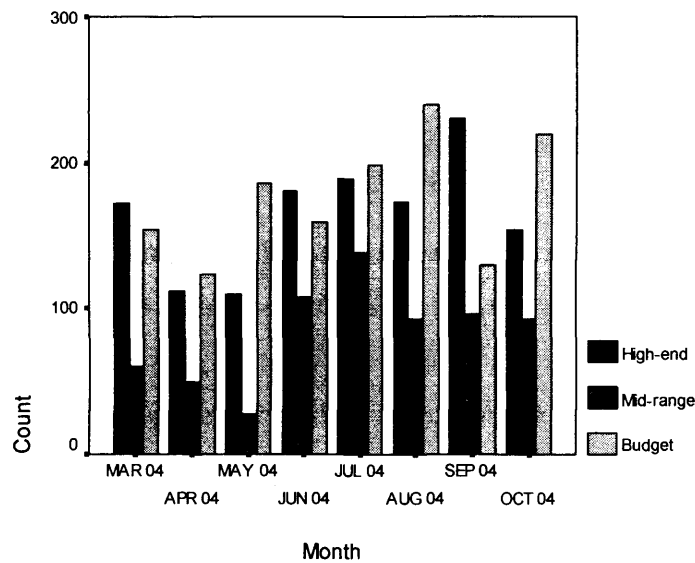


Figure 8.9: The number of tourists staying in each category of accommodation from March to October 2004

8.5 Discussion

The results of this chapter demonstrate that the socioeconomic and environmental impacts of individual tourists in the study population differed considerably, and that these impacts were linked to various measures of tourists' characteristics. These findings have important

implications for the future management of tourism at BINP, and are discussed in the following sections.

8.5.1 Tourist classification

8.5.1.1 Classification by personal and trip characteristics

Other studies of tourists visiting nature-based attractions have found that they tend to be 40-50 years of age, well educated and of above-average income (Hvenegaard *et al.*, 1989; Hvenegaard, 2002). The tourist population at BINP appeared to match this description well. Their mean age was around 40, and their ability to come to Uganda at all clearly indicated a high level of disposable income. However, the tourists in the study area appear to have been older than those visiting gorillas in Rwanda, where, in a recent study, over 40% were under the age of 30 (Grosspietsch, 2006). This probably reflects the fact that Rwanda is widely perceived as a risky destination, and that younger tourists are more resilient to risk (Lepp & Gibson, 2003; Grosspietsch, 2006). Most of the tourists in the study population were from Europe or North America, demonstrating the incredible pull of gorillas as a tourism product. African visitors were in a small minority, and despite the greatly reduced prices on offer to citizens, less than 2% of gorilla-trackers were Ugandan. Some efforts have been made to encourage Ugandan visitors in the past, but it would appear that a lot more needs to be done if a domestic tourism market is to be developed.

The great majority of tourists interviewed were travelling on some kind of tour organised through a tour operator (75.2%). This reflects the fact that getting to Bwindi independently is difficult and time consuming, because it is so far from any urban centre. As a result many visitors chose to make life easier for themselves by using a tour operator. Most visitors also stayed for a short time, which seems to be typical of the 'whistle-stop' itineraries favoured by most safari operators. The distribution of tourists across camps was not even (see Chapter 4 for analysis), with BCRC and GFC dominating the market. This is interesting because these two camps represent the two extremes of accommodation at BINP; a community owned budget camp on the one hand and a high-end foreign owned luxury camp on the other. Some of the other camps did very little business, and may have been struggling to survive. Overall, when looking at personal and trip characteristics, it would seem that the study area was receiving a wide range of tourists including young backpackers, middle aged tour groups and wealthy older people on tailor made tours. This

creates ideal conditions for investigating differences between tourists as carried out in this chapter.

8.5.1.2 Classification by motivation to visit BINP

The results of the classification by motivation exercise show that in some respects tourists had widely divergent reasons for visiting BINP, whereas in others they were very consistent. Particularly notable was the finding that aspects of the environment were extremely important motivating factors for almost all visitors, with each of the three retained items in this dimension scoring a mean of above 8 out of a possible 9. This is not surprising, because almost all tourists who came to BINP did so primarily out of a desire to see gorillas, and reflects results found with gorilla-trackers in Rwanda (Grosspietsch, 2006). Even for the few tourists for whom gorillas were not the primary motivation, their reasons for coming tended to focus on other wildlife, such as birds. Responses to the other dimensions were more variable, with the cultural dimension scoring well and the escapism dimension less so. Overall, the motivation survey paints a picture of visitors to BINP who were highly motivated to see and experience wildlife, keen to meet local people and experience their culture, and in favour of staying somewhere clean and easy with little stress. Most visitors did not want to stay somewhere luxurious, and were not concerned about physical rest. Indeed, many wanted to be as active as possible.

Understanding the type of visitors coming to BINP is of some interest in itself, but more important from the perspective of either conservation or the local human population is how visitor characteristics translate into impacts. These relationships are considered in the following sections.

8.5.2 The socioeconomic impacts of different tourists

The total amount of money spent by tourists during their time at BINP was linked to tourist age, gender, trip type, length of stay and choice of accommodation. These results are not surprising. Older tourists are often found to spend more, because they tend to be wealthier than younger tourists and can therefore afford to spend more during their stay (e.g. Nicolau & Mas, 2005). Similarly, female tourists are usually found to outspend men, particularly with respect to purchasing souvenirs (Anderson & Littrell, 1995). The relationship between trip type, accommodation and total spending also makes sense, because independent

tourists are usually on a low budget, and therefore spend much less than those travelling with tour operators, and because tourists staying at budget camps spend much less on accommodation than those at mid-range camps, who in turn spend less than those at high end camps. Finally, the link between length of stay and total spend can probably be explained by the simple fact that tourists staying longer had more time to spend money in the study area.

The results for total spending are interesting, but do not tell us very much about differences between tourists in their impact at the local level. This was measured in this chapter by considering which tourist characteristics could explain the amount of tourist spending which was finally retained in the study area. The results showed that age, gender, trip type and length of stay were all linked to retained spending as well as to total spending. However, the tour camp chosen was not significant, whereas the tourist's region of origin was. The finding that older people, women and those staying longer tended to leave more money in the local economy can probably all be explained using the same reasons given above when considering total spending. The results for region of origin are somewhat more difficult to interpret, as no clear pattern emerges when inspecting differences between regions graphically. One interesting point is the perhaps surprisingly high retained spend from African visitors. This might be due to a greater willingness to buy local products when compared to travellers from elsewhere who may have felt disinclined to go shopping in the village or stay in local accommodation, on the grounds of perceived lack of quality or any other reason. If true, this argues in favour of encouraging domestic and regional tourism.

The differences in retained spending between those on different types of trip are very interesting. Independent travellers total spending in the study area was less than a quarter of that spent by those travelling with TOs, but their retained spending was over half as much. This shows that a very high proportion of independent travellers' spending was retained, in keeping with what has been found elsewhere (Hampton, 1998; Scheyvens, 2002a). It is also interesting to note that those on organised group tours appeared to leave more money in the local economy than those on tailor made tours. Personal observations and discussions with tour operator staff suggested that this was because the larger groups on organised tours usually had to stay longer in the area as they waited for all the group members to see the

gorillas, and because they often had very pro-active tour leaders, who encouraged their groups to go on the village walk and arranged cultural performances for them in the evenings. In contrast, tourists in very small groups on tailor made tours tended to spend most of their time when not tracking in their tour camps, and it was also difficult for their leaders to arrange cultural performances for such small groups. Overall, it would appear that the best tourists in terms of total money delivered into the local economy were older, female, stayed several nights at BINP, and were on organised group tours.

8.5.3 The environmental impacts of different tourists

The only variable explaining the closest contact distance reached between tourists and gorillas was tourist age. There are two ways of interpreting this finding. First, younger tourists genuinely could get closer to gorillas. This could be explained by younger tourists being more foolhardy or enthusiastic in their desire to approach gorillas, or by their having less respect for the tracking rules. Second, the result could be due to some kind of age bias in the estimation or reporting of proximity. It is possible that younger tourists were keen to exaggerate the closeness of their encounters, or perhaps older tourists were concerned about having broken the rules and inflated the distances involved. Another possibility is that distance estimation was poorer in older people, because older people are generally poorer at spatial memory tasks (Moffat *et al.*, 2001). Given these possible caveats and the fact that the overall effect was rather weak, it seems sensible to avoid placing any great significance on the finding linking tourist age to closest contact proximity.

The only variable which explained the closest contact with gorillas maintained for at least 15 minutes was trip type. Again, this finding is rather difficult to explain. Tourists on tailor made tours reported being considerably further from gorillas on this measure than those on other trip types. I noticed that the leaders on tailor made tours tended to give very thorough briefings, so it is possible that these tourists tried harder to respect the rules and stayed back. However, Chapter 7 showed that in many cases gorillas approached tourists, and it therefore seems unlikely that they would have been able to stay further back by their own choice. An alternative explanation is that there was some kind of consistent reporting bias in the sample group which led to respondents on tailor made tours inflating contact distances or those on other types of trip reducing reported distances. This is possible, although if it was deliberate no hint was detected that this might be happening whilst

collecting the data. Overall the results for contact proximity appear to suggest that younger tourists and those not on tailor made tours got closer to the gorillas, and therefore had a greater probability of infecting them with a disease. Improved briefings and dissemination of information to such tourists might help to reduce their threat in future. However, it is also possible that the results reflect a reporting or memory bias, and this should be further investigated.

Tourist age was found to influence the likelihood that tourists had suffered from symptoms of risk diseases during both the 24 hours and 2 weeks before interview. In both cases younger tourists were more likely to have suffered symptoms. Several credible explanations for this result can be put forward. Importantly, younger tourists were more likely to be travelling independently and staying in budget camps. From talking with them it was clear that they also tended to adopt more risky behaviour during their trips, such as eating food from street vendors. Using public transport, staying in unhygienic accommodation and eating poorly prepared foods are all common sources of infection for travellers (Hillel & Potasman, 2005; Rack *et al.*, 2005; Redman *et al.*, 2006), and this could explain the findings here. Alternatively, there could have been a bias in the reporting of disease symptoms from different age groups, either deliberately or due to a different interpretation of symptoms. In the case of 24 hour symptoms, nights at BINP was also found to be significant, with those staying longer more likely to have had symptoms. This is interesting, as it might suggest that some tourists became infected whilst at BINP. However, as tourists were interviewed directly after tracking, and most tracked after only one night at the park, it seems unlikely that this finding could be linked to infection events which took place in the study area. It is possible that tourists taking more time over their trip in general were more likely to have become infected. This possibility deserves further exploration.

The results for gorilla tracking group size are worrying. They represent the first reported evidence that larger groups result in closer encounters, particularly when looking at longer encounters lasting at least 15 minutes. This is of particular concern in light of the fact that since fieldwork was carried out, maximum gorilla-tracking group size at BINP has been increased from 6 to 8 individuals. The trend demonstrated here suggests that this might be leading to even closer encounters and more risk to gorillas. There are three possible explanations for this finding. First, larger groups could be more difficult for guides to

control, as they have to watch more individuals at once. Second, the gorillas may behave differently when faced with larger groups of tourists, and be more likely to approach for some reason. Finally, the area occupied by the tourist group will increase with group size, perhaps making it more likely that tourists will get closer to the gorillas by chance as the gorillas move around. Whichever explanation is correct, this result is important and calls into question the wisdom of increasing group size as has recently occurred in Uganda and Rwanda.

Overall, the results linking tourist classification variables to environmental impacts paint an interesting picture. The analyses carried out suggest that younger tourists got closer to gorillas, and that they were more likely to have been unwell and therefore possibly infectious. Together, these findings suggest that older tourists are superior in this respect, because they are less likely to infect the gorillas they are visiting. However, it is also possible that a consistent bias in reporting the data by age affected the results, be it deliberately or as a result of different perceptions of health and distance by the old and the young. No such bias was overtly obvious during fieldwork, but further research to explore the true significance of the results presented here would be useful. It is also clear that smaller tourists groups are less of a threat to gorillas because they tend to get less close. Smaller groups should be encouraged in future.

8.5.4 Attitudes and impacts: the missing link

It is interesting to note that none of the impact variables tested, either socioeconomic or environmental, returned any of the measures of tourist motivation to visit BINP as significant explanatory factors. This suggests that, contrary to what might be expected, tourists' expressed interests and motivations did not translate into measurable differences in behaviour or impact. There are several possible explanations for this finding. First, it may simply be the case that motivations and impacts had no relationship, and that tourist behaviour and attitudes were uncorrelated. Second, tourists may have planned to behave differently during their trip, but found themselves constrained by their tour itinerary or lack of opportunity to meet local people, purchase souvenirs etc. This breakdown between intended and actual behaviour has been noted in tourists elsewhere (e.g. March & Woodside, 2005). Third, motivations to visit BINP may have strongly influenced behaviour, but there was so little variation in motivation across the tourists population that this could

not be detected in statistical analysis. This certainly seems possible in the case of motivation based on the environment, where the mean score for each item was over 8 of a possible 9. Whichever of these explanations is correct, managers and policy makers planning tourism at BINP in the future should be aware that attracting tourists who say they are motivated by a certain aspect of the study area will not necessarily translate into them having a more positive impact on it.

8.5.5 Seasonality

The links between tourist characteristics and their impacts discussed above suggest that the best tourists visiting the study area in terms of their socioeconomic and environmental impacts were older, female, staying several nights at BINP and travelling on some kind of tour. This is in line with the type of tourist and tourism promoted by national tourism policy in Uganda (Uganda Ministry of Tourism, 2003), and might suggest that such tourists should be encouraged at BINP at the expense of all others. However, the results for the analysis of seasonality put this conclusion into doubt. The industry was not strongly seasonal over the year, having only a short low season in April / May. However, the composition of the tourist population changed dramatically during the year. Tourists visiting the park during the low season were much younger than those at other times, and the low season also coincided with a slump in the number of mid-range and high-end visitors to the park. This suggests that whilst older, wealthier visitors did not come to Bwindi during the low season, younger, poorer tourists continued to visit the park all year round. If tourism at BINP were managed to target the visitors found to have the most positive overall impact by the data presented here, these younger tourists would be discouraged, resulting in a more severe low season. This would have clear negative implications for the local population which is heavily dependent on tourism revenue, and would also reduce permit sales for UWA.

The seasonal fluctuations in the composition of the tourism population at BINP illustrate the importance of encouraging a broad range of visitors to the National Park. Doing so has several advantages. First, it buffers the local economy, and permit sales, against seasonality and crashes in specific segments of the tourist population (due to uncontrollable events such as political conflicts). Second, diverse tourists require diverse facilities, and this makes it possible for the industry to support more businesses and more jobs, rather than allowing a single large hotel to cater for every visitor. Third, different tourists can have

complementary impacts (Hvenegaard & Dearden, 1998b). For example, budget tourists in this study tended to spend their money in locally owned businesses, which, as Chapters 5 and 6 showed, played a disproportionately great role in delivering benefits to the local community and encouraging positive attitudes towards tourism. High-end tourists rarely used locally-owned businesses, but some of them had made spectacular one-off donations to local organisations which budget travellers could never have afforded. These were not picked up by the tourist survey because they were very rare, but the accounts of local people suggested that they were important (see Section 5.4.2.2). These findings reflect those of other recent studies which have also found that encouraging a broad mix of tourists may be the best way to deliver both socioeconomic and environmental benefits (e.g. Loon & Polakow, 2001; Stoeckl *et al.*, 2006).

8.6 Conclusions

The results of this chapter demonstrate that there were substantial differences between different types of tourists in the impacts that they had at BINP, particularly with respect to economic impacts for the local community. The tourists delivering the most revenue which was retained in the study area were older, female, stayed for several days and tended to be on organised group tours. The tourists presenting the least risk to gorillas also appeared to be older. Combined, these results suggest that older, female tourists on tours which involve staying several days at BINP should be encouraged to visit in order to facilitate the delivery of ecotourism. However, seasonal fluctuations in the composition of the tourist population, and complementary impacts of different tourist groups, suggest that in fact a wide range of tourists should be encouraged in the study area. Happily, this matches quite well the situation found at BINP during the study period. However, there remains room for improvement, and this could be achieved by considering the following recommendations.

First, permit pricing is becoming a major issue. Prices have increased rapidly over the past few years, and at the time of writing there are rumours of plans to increase permit prices to \$500 US. At some point permits will become unaffordable to budget tourists, and this could result in a markedly more severe low season, and the closure of the two budget camps, including Buhoma Community Rest Camp, which plays a major role in delivering local benefits of tourism (see Chapters 5 & 6). Clearly this would be very unfortunate, and would certainly damage local goodwill towards tourism and the National Park. A simple way

around this problem would be to introduce seasonal pricing, as is standard in the wider tourism industry. Lower prices could be charged in the low season, encouraging more tourists to come, and giving younger people (including many volunteers who are in the country for long periods) the opportunity to visit the gorillas. At the same time, higher prices could be charged in the peak season when demand is extremely high. Combined, this simple action would result in increased revenues for UWA, and more tourists to support the local economy. Second, the results linking tourist group size to contact proximity make it clear that group size should not be increased any further, and that if anything, the current group size should be reconsidered. This is clearly unlikely in the face of the need to raise revenue, but at the very least this issue requires further research to confirm whether or not larger groups are resulting in closer contacts as the results presented here would suggest.

Chapter 9: Tourism, conservation and livelihoods at BINP: conclusions and recommendations

9.1 Chapter summary

The previous 5 chapters investigated the impacts of tourism under each link in the theoretical framework for ecotourism, and the role of tourists in determining these impacts (Ross & Wall, 1999; Figure 9.1). However, in order to understand the overall performance of tourism in the study area, it is necessary to consider all of these impact dimensions together. This chapter takes this broader perspective. It begins by summarising the results of this study under each of the links in the ecotourism framework, and how they differed depending on tourist characteristics. It then considers the extent to which these combined impacts matched the theoretical expectations of ecotourism, and explores some of the features of the study area which might have contributed to successes and failures under the framework. Finally, the chapter draws out a series of recommendations for improving the performance of tourism at BINP, and considers the wider relevance of the study for tourism theory and the delivery of ecotourism at other sites around the world.

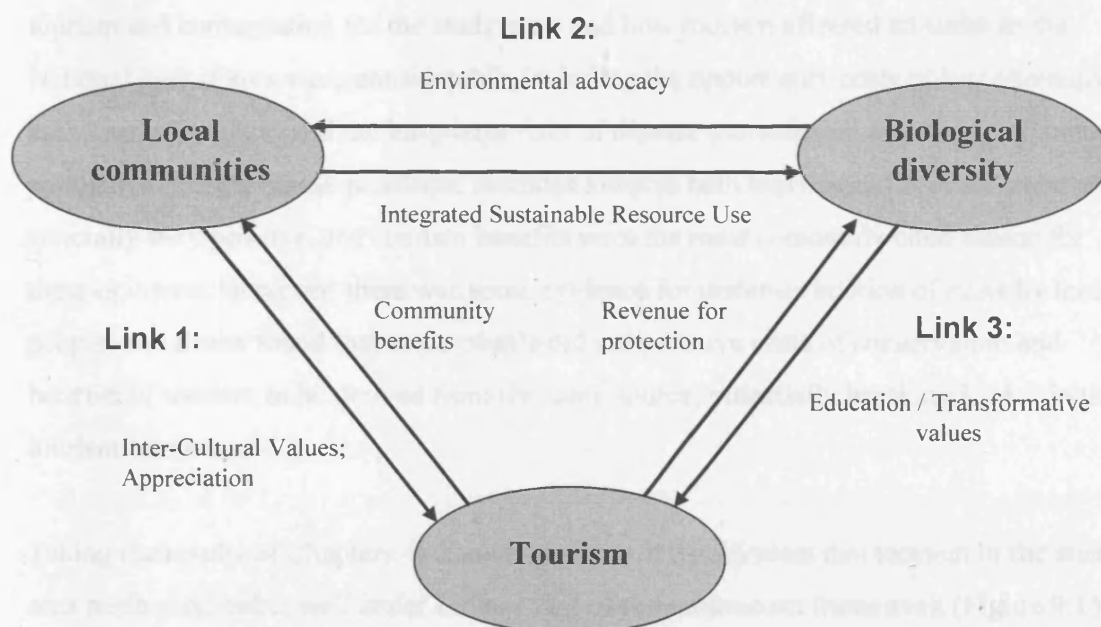


Figure 9.1: The theoretical framework for ecotourism, adapted from Ross & Wall (1999). This chapter considers the overall performance of tourism at BINP against the framework

9.2 The impacts of tourism at BINP

9.2.1 The socioeconomic impacts of tourism

Chapters 4, 5 and 6 considered various aspects of the socioeconomic impacts of tourism in the study area. Chapter 4 demonstrated that the study area showed important differences in various indicators of socioeconomic status when compared with other areas around BINP, and that, despite heavy leakage, the tourism industry brought in far more money to the study area than all other sources combined. These results suggested that tourism was resulting in socioeconomic change at the population level. Chapter 5 disaggregated the impacts of tourism to the household and individual level, showing that although over 40% of study households had a member involved in tourism in some way, the distribution of wealth and of tourism benefits was nonetheless heavily skewed. This was because access to engagement in tourism and specific tourism activities was constrained by factors such as age, gender, education, location, wealth and social networks. Direct benefits of tourism, especially through employment, far outweighed indirect benefits delivered through revenue sharing schemes, although these schemes did bring positive change to resources shared by the entire population, such as roads and schools. Locally owned organisations were found to play an important role in delivering benefits to the study population, particularly in the case of the Buhoma Community Rest Camp. Finally, Chapter 6 investigated the costs of tourism and conservation for the study area, and how tourism affected attitudes to the National Park. Costs were considerable, including the opportunity costs of lost alternative activities in the park, and the long-term risks of disease transmission into the local human population. Despite these problems, attitudes towards both tourism and Bwindi forest were generally very positive, and tourism benefits were the most commonly cited reason for these opinions. However, there was some evidence for under-estimation of costs by local people, and it was found that some people did not perceive costs of conservation and benefits of tourism to be derived from the same source, potentially breaking Link 2 in the tourism framework.

Taking the results of Chapters 4, 5 and 6 together, it would seem that tourism in the study area performed rather well under Links 1 & 2 of the ecotourism framework (Figure 9.1). It was broadly positive for the study population, and had a generally positive impact on local attitudes towards the National Park. However, the results also demonstrate that within the study population there were winners and losers, including some people who suffered

considerable costs of tourism but gained little in return. Recommendations which might address some of these difficulties are presented below in Section 9.4.1.

9.2.2 The environmental impacts of tourism

Chapter 7 focused on the environmental impacts of tourism in the study area. As was expected, revenue from tourism, and in particular from the sale of gorilla tracking permits, was found to be substantial, and certainly sufficient to cover park management activities. However, worrying evidence was uncovered for breaches in the regulations governing gorilla tracking. Most tourists got much closer to gorillas than the rules allowed, and some tourists who went gorilla tracking had suffered in the very recent past from symptoms of infectious diseases to which gorillas are susceptible. Tourism clearly had a very major role to play in the conservation of the gorillas at BINP and of the park in general, but more attention needs to be paid to reducing the risks of disease transmission from tourists. Recommendations designed to mitigate these risks are described below in Section 9.4.1.

9.2.3 The role of tourists in determining impacts

The final data chapter, Chapter 8, considered the characteristics of gorilla-tracking tourists in the study area, and how these were linked to their individual impacts. The tourists at BINP were found to be similar to those visiting nature-based attractions elsewhere. The amount of each tourist's spending retained in the study area was linked to their age, gender, trip type, length of stay region of origin, and the incidence of reported recent symptoms of disease was also linked to age. This suggested that the best tourists overall to deliver ecotourism might be older, female, staying several nights in the study area and on an organised group tour. However, consideration of the changing tourist population during the year and the complementary impacts of different tourist types suggested that in fact a broad range of tourists should be encouraged, similar to that which was found at the park during this study. Worryingly, tourist group size was found to influence the proximity of contacts with gorillas, with larger groups getting closer. Recommendations designed to mitigate this problem and to encourage the most appropriate mix of tourist types to visit BINP in the future are put forward in Section 9.4.1.

9.3 Ecotourism at BINP: rhetoric or reality?

9.3.1 *The performance of tourism at BINP against the ecotourism framework*

Studies which consider the social, economic and environmental impacts of tourism together are rare, and most authors who have set out to perform such interdisciplinary analysis of purported ecotourism sites have returned disappointing results (e.g. Pattullo, 1996; Walpole, 1997; Duffy, 2002). Against this generally critical backdrop, the results of this study, as summarised above, are encouraging. Gorilla-tracking at BINP appeared to be broadly beneficial under each link in the framework, delivering some genuine benefits to the study population, mitigating negative local attitudes towards the park, and funding the conservation of BINP. Whilst considerable problems were identified with various aspects of the relationship between tourists, people and the National Park at the study area, there was no evidence for a catastrophic breakdown in any of the links in the ecotourism framework. Whilst these results are encouraging, before concluding that tourism was performing well overall it is necessary to consider a number of important caveats. These are summarised in the following paragraph.

First, as summarised above and described in detail in the data chapters, there were considerable problems identified in the performance of tourism at BINP under each link in the ecotourism framework. These may not have been sufficient to make tourism an overall cost to the local population or the park, but they were significant and cannot be ignored. Second, it is important to stress the spatial limits of tourism impacts at BINP. Most of the benefits found in the study area were derived directly from the tourism industry, through the sale of goods and services, and it is clear that opportunities to gain such benefits did not exist for the great majority of people living next to the park. Indeed, personal observations and conversations with residents of other areas suggested that tourism had almost no impact on livelihoods and attitudes around most of the park, being limited to the effects of the Tourism Revenue Sharing scheme, which has had mixed success (Archabald & Naughton-Treves, 2001; Chapter 5). Tourism helped to resolve some conflict between people and the park in the study area, and can therefore be seen as a successful intervention, but it by no means resolved all the problems around the entire park. Finally, it is important to remember that any assessment of the overall performance of tourism can only be made on the basis of the data collected, which in turn reflect the methods employed. The impacts of the industry are diverse, complex, and far-reaching, and it will only ever be possible for researchers to

measure a limited number of impact variables which they consider the most relevant and amenable to study. Variables of possible importance which were considered but eventually excluded from data collection in this study, due to limitations on time and resources, include the impacts of tourism on the physical environment and on the behaviour of local people with respect to the National Park. Further research to investigate these issues in future would be useful.

9.3.2 Features of the study area which may have contributed to the findings

Given that tourism in the study area seemed to perform better than many other sites under the framework for ecotourism, an important question to ask is why? This study did not collect any data to make formal comparisons with other sites, but several possible speculative explanations can be put forward, each of which deserves further research attention. These are considered in turn below.

First, the tourism product in the study area was clearly outstanding. Tourism at many other PAs has failed or been held back by the lack of a genuinely marketable product (e.g. in the Congo basin, Wilkie & Carpenter, 1999; Blom, 2001) This was not an issue of concern at BINP. The gorillas were well habituated, the accommodation on offer was excellent, and the area had reasonable transport connections and security. Taken together, these gave Bwindi an immediate head-start as compared to many other proposed tourism sites which cannot match the product.

Second, the tourism industry in the study area delivered the majority of its benefits to local people through direct engagement in tourism rather than through publicly administered Revenue Sharing (RS) schemes. This situation certainly had some down sides, such as the way that it excluded many individuals from benefiting, on the basis of their inability to gain access to tourism benefits (Chapter 5). However, it also meant that people who did enjoy benefits of tourism usually realised them in terms of money and improved skills, which were enormously helpful in their everyday lives, and compensated them for lost livelihood opportunities caused by the gazettement of the National Park. This is in stark contrast to RS schemes, which typically hand out community level benefits such as schools and hospitals, which are often inappropriate to compensate for the type of costs suffered as a result of conservation (Emerton, 2001). Publicly administered RS schemes can also suffer from

institutional problems, including mismanagement and the misappropriation of funds (not least in Uganda, Archabald & Naughton-Treves, 2001). Private sector businesses are by no means immune to such problems, but the multiple routes by which local people could access direct tourism benefits in the study area meant that a single corrupt RS body could not prevent all potential benefits reaching their intended recipients. These findings match those from recent work at other sites, which show that tourism can be most beneficial as a development tool when it is coupled with private sector operators willing to work with local people for their own benefit (e.g. Ashley, 2006). Clearly there is a role for NGO support and public funds to benefit people not reached directly by tourism, but the results of this study do suggest that the benefits of unregulated, direct engagement in tourism should not be underestimated.

Third, the tourism infrastructure in the study area was located in the same area inhabited by the local population. This may have caused some problems, and certainly contributed to very high local land prices. However, it also made it possible for large numbers of people to engage in the tourism industry through employment, performance, portering, selling crafts or any other route, without having to move house or totally abandon other livelihood activities. This was demonstrated with statistics in Chapter 5, where it was found that overall engagement in tourism, and engagement through employment, were linked to the distance individuals lived from the park gate. This result has important implications, because at many nature-based tourism sites elsewhere camps are located far away from local settlements. This makes it extremely difficult for people to become involved in the industry, and forces local people to rely on RS schemes for benefits, which as we have seen suffer various constraints on their effectiveness.

Finally, despite the lack of any formal local organisation with control over the industry, local people in the study area nonetheless had considerable influence over how the industry operated. Many of the tourism businesses were locally owned, including the important BCRC. The several membership organisations in the area were run by local people, and a large number of the study population worked for UWA in the park. In this way local people participated strongly in tourism, a feature of ecotourism which some authors have identified as a pre-requisite for ecotourism (Tosun, 2000; Scheyvens, 2002b). However, it must be noted that whilst most respondents seemed generally happy with their current level of

control over the industry, this question was asked when things were going well. There are numerous ways in which the industry could change to become less favourable to local people (for example, if permit prices were raised so high that no budget tourists could afford to come), and should such changes occur, there were no mechanisms in place for local people to stop them or appeal against them. In this way, local participation was far from complete.

9.4 Recommendations

9.4.1 Recommendations for management at BINP

Although tourism seemed to be performing well in the study area overall, there remain several possible areas for improvement against the theoretical framework for ecotourism. These might be addressed through the application of some simple recommendations, many of which are described in detail in the discussion section of each data chapter. These recommendations are summarised below for each link in the framework in turn.

9.4.1.1 Link 1: Tourism and local people

The main problem with the delivery of tourism benefits identified in Chapter 4 was the high level of leakage of tourism revenue out of the study area. This problem is not uncommon in tourism sites located in rural areas of developing countries (e.g. Walpole & Goodwin, 2000), but could nonetheless be reduced. One way to achieve this would be by increasing local ownership of tourism businesses. The locally-owned businesses in this study delivered more benefits to the community, and more of their revenue was retained as profits which were not repatriated out of the study area. However, given local constraints on market access (due to lack of capital and tourism expertise), increasing local ownership might be difficult. A simpler way of reducing leakage would be to increase the procurement of local products by tour camps and other tourism businesses. This could be achieved by helping local farmers to set up producer associations so that they could compete with regional markets in the production of food products. Similar interventions have been attempted elsewhere, with some signs of success (e.g. Torres, 2003; Ashley, 2006).

The biggest problem identified in Chapter 5 was with the distribution of tourism benefits, which was highly inequitable due to several factors constraining individual access. Getting around these constraints would be challenging, because many of them were based on the

skills required by the industry and on deep-rooted local mechanisms for determining access on the basis of social networks. However, it might be possible to relax some of the education requirements put in place for applicants for jobs at UWA and elsewhere, which seemed unnecessarily high in some cases. Very few women were employed full time, and this could be addressed through efforts to persuade employers to take on more female candidates. Marginalised groups such as the Batwa could also be targeted for employment in roles they are qualified to fulfil, particularly in jobs within UWA, such as acting as gorilla trackers. Finally, the benefits of tourism could possibly be spread a little wider if tour operators could be persuaded to increase the number of days spent in the area and add non-gorilla attractions near BINP to their itineraries.

Chapter 6 identified considerable costs of tourism, several of which would be very difficult to address. For example, it is difficult to see how it would be possible to reduce the cost of local commodities which have been driven up by tourism. Some of the cultural impacts of tourism might more easily be tackled. For example, the Batwa performances put on for tourists could be improved considerably by relocating them to somewhere away from their homesteads, giving the Batwa control over when they perform, and giving them the chance to represent themselves to tourists, even if through an interpreter. It should also be seen as a priority to improve local understanding of the potential risks of diseases brought by tourism, particularly HIV/AIDS. This could be achieved through education campaigns targeting at-risk individuals.

9.4.1.2 Link 2: People and the park

One of the most intriguing problems identified by Chapter 6 was the potential mismatch between local perceptions of the source of the costs of conservation and the benefits of tourism. This had the potential to cause local people to feel that costs of conservation were going uncompensated, potentially harming the ability of tourism to encourage conservationist attitudes. Addressing this problem requires efforts to cement the link between the park as a forest and as an institution in the minds of local people. This could be achieved through increased education work, perhaps focusing on the fact that conserving the park for gorillas inevitably means conserving the park for potential crop-raiders at the same time. A second problem identified by Chapter 6 was the fact that some people who suffered considerable costs of conservation received almost no benefits from tourism.

Mitigating this problem would be complex, because very often the people living next to the park were among the poorest, with the least ability to gain access to tourism benefits. They could perhaps be targeted in future as beneficiaries of the RS schemes run by both UWA and BCRC in the area.

9.4.1.3 Link 3: Tourism and biodiversity conservation

Chapter 7 presented worrying data regarding the risks of diseases being transmitted to gorillas. Tourists got too close, stayed there too long, and in some cases showed signs of being possibly infectious whilst tracking. These issues could be addressed with interventions targeting tourists before their trip, during their stay at BINP, and during their visit to the gorillas. Before their trip, tourists could be required to receive vaccination against risk diseases, particularly influenza. During their stay at BINP, tourists could be required to receive a briefing the day before tracking, giving them more time to consider self-reporting as unwell, and they could be required to undergo basic medical screening. Finally, during their visit to gorillas, tourists could be required to wear surgical face masks to reduce the risks of aerosol disease transmission. Each of these recommendations might have logistical drawbacks for the smooth operation of tourism activities, but together they would reduce the risk of a tourist infecting the gorilla population, an event which could have devastating consequences.

9.4.1.4 The role of tourists

Chapter 8 found that encouraging a wide range of tourists to BINP offers the best hope of maintaining the benefits of tourism enjoyed by the park and the local human population at the time of this study. This could best be achieved by introducing seasonal pricing for gorilla permits, so that they are cheaper in the low season and more expensive during peak months. This would possibly increase overall revenue for UWA, mean that there would be lots of tourists at BINP all year round, which would be good for the local economy, and avoid the possibility of the budget end of the market disappearing as prices are pushed higher. Chapter 8 also found that tourists in larger groups got closer to the gorillas. Groups sizes have since increased to a maximum of 8, and the results presented here suggest that ideally groups should be returned to 6, or at the very least further research is required to investigate what impact on contact proximity the increased group size has had.

9.4.2 Recommendations for tourism elsewhere

The above recommendations focus on improving the delivery of tourism benefits at BINP. However, certain aspects of tourism at BINP appear to have given it an advantage over other sites (see Section 9.3.2 above), and these can be used to derive recommendations for improving the performance of tourism elsewhere. These are presented in the following paragraphs.

First, the results presented here suggest that more focus should be given in future to the role of direct engagement in the tourism industry through the private sector in delivering benefits for local people. Many proposed ecotourism sites rely on RS schemes to deliver benefits to local people, but the evidence presented here suggests that direct engagement can be very effective, involve a large number of people, and minimise the risks of misappropriation of funds. It also delivers benefits which are tangible and meaningful in people's lives, rather than measured in terms of schools and hospitals which do not directly compensate for costs of conservation (Emerton, 2001). How the balance between RS schemes and direct engagement should best be struck remains an open question. At the time of writing, a high-end eco-lodge which will put money into an RS scheme in exchange for a monopoly on gorilla permits is proposed for Nkuringo on the south side of BINP, and, if it goes ahead, this will provide an ideal opportunity for comparative research into this issue.

Second, more sites might consider the potential benefits of locating tourism facilities closer to areas where people live. This needs to be done with caution, and consideration for possible cultural impacts, but the results presented here suggest clear benefits in terms of increased access to tourism opportunities for local people. This does not need to be seen as just a benefit for the community; cultural tourism is increasingly popular, and it might make good business sense to locate tourists closer to human settlements and their cultural attractions. In addition, locating tourism facilities in areas occupied by people might make it more possible to leave some parts of protected areas completely free from human habitation, with potential benefits for the quality of the tourism product within the park, and for wildlife.

Third, site managers and researchers clearly need to pay more attention to the role of tourists in delivering both benefits and costs of tourism. The results of this study showed

considerable differences in the economic impacts of different types of tourist, and some suggestion of differences in environmental impacts. These are very important for the delivery of ecotourism, and these differences cannot be ignored.

Finally, it would seem to be a good time to move away from the term 'ecotourism' altogether. This study has defined it in terms of its impacts, but there is no strict definition of the term, and it is widely used as a marketing tool by operators and hotels within the industry. Clearly many of these operators have no real interest in delivering anything other than a profit to themselves, and studies of such purported ecotourism sites will in most cases return evidence of negative impacts. This is perhaps one reason why many authors have written ecotourism off as an impossible dream (e.g. Mowforth & Munt, 2003). The results presented here suggest that this is premature, and that if the product, the site and the management are right, there may still be some cases where win-win benefits for tourists, people, and biodiversity might be possible. Perhaps what is now needed is a new term or label, with stricter controls, which can be the focus for future research into this issue.

9.5 Conclusions

Despite the popularity of tourism as a tool for delivering ICD goals, little is known about how well the industry performs in practice as a tool for conservation and development. Numerous studies consider aspects of the problem, but very few consider the links between tourists, local people and biodiversity together. This study has addressed this issue, disaggregating some of the key impacts of tourism for people and conservation at BINP. The results suggest that tourism was performing well overall in the study area. The industry had delivered measurable socioeconomic benefits, had improved local attitudes to the park, and was funding all conservation activities. However, there were also some considerable problems: first, most revenue from tourism leaked out of the study area; second, tourism benefits were inequitably distributed, and access to them was constrained by various factors; third, local people suffered considerable costs of tourism and conservation, many of which were not recognised; fourth, tourists broke various regulations of gorilla tracking, suggesting a greater threat of disease transmission to the gorillas than had previously been realised; and fifth, some tourists delivered many more benefits to the study area than others. Various interventions could be applied to remedy these difficulties, such as introducing seasonal permit pricing, increasing opportunities for local people to sell produce to the

industry, and introducing stricter measures to reduce the risks of disease transmission from tourists to gorillas.

The results of this study are not only of relevance to BINP. They also suggest ways in which the performance of tourism as an ICD tool elsewhere might be improved. This could be achieved by: increasing the focus on engagement in the private sector as a mechanism for delivering local benefits, locating more tourism facilities close to human settlements, paying more attention to the role of tourists in delivering impacts, and moving away from the term 'ecotourism'. Tourism is not a panacea for conservation and development, but the results of this study show that under the right circumstances, it can deliver genuine benefits for local people and for biodiversity.

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Appendix A: Baseline Household Survey (BHS) data form

The BHS data form is shown on the following page. This is the printed form as it was used in the survey, except that it has been scaled down for presentation here to conform with the margins required for the thesis. The version used in the field filled the page and had larger fonts.

Appendix B: In-Depth Household Survey (IDHS) data form

The IDHS data form is shown over the following three pages. This is the printed form as it was used in the survey. However, as it was printed in Kampala, several changes which were made after piloting the survey could not be altered on the form in the field. This means that some parts of the form do not include appropriate spaces to fill in the data which were actually collected. This is particularly true of the third page, where detailed descriptions of local attitudes to different sectors of the tourism industry were not collected. Instead, open-ended questions were used (as detailed in Chapter 6), and responses to each were written onto the back of the form, which was blank.

The form as presented here has been scaled down to conform with the margins required for the thesis. The version used in the field filled the page and had larger fonts.

Household no		Respondent				Walls				Floor				Roof			
No. rooms		Other building				When built				HH here since				Why mig?			
HH Assets	1)			2)			3)		4)		5)		6)		7)		
Crop/animal	E	S	E+S	Land	H/F	Owner?	Income	Crop/animal	E	S	E+S	Land	H/F	Owner?	Income		
Other source 1		Amount				Other source 2		Amount				Other source 3		Amount			
% Food home						% Food bought						Meat		/ week			
	Food/drink (month)			Household items (month)			School (since Xmas)			Clothes (since Xmas)			Transport (since Xmas)			Luxuries (year)	
Spent																	
On what																	
	Land buildings (year)			Farming (year)			luxuries, dowry (year)			Medical (year)			Church donations (year)			Saved (year)	
Spent																	
On what																	

ID	Food/drink	House items	School	Clothes	Transport	Luxuries	Land / buildings	Farming	Medical	Church	Saved
Details:											
Details:											
Details:											

	Aware?	HH imp	Comm imp	Attitude	Details
Campground					
Other camps					
UWA					
Porters					
Village walk					
Craft industry					
Groups (prog. orph. bees etc)					
UPDF					
'99 attack					
Other costs of T (specify)					
Overall Tourism	X				Change 10 yrs
Benefits of NP (specify)					
Crop raiding					
Other costs of park (specify)					
Overall Park	X				Change 10 yrs

Appendix C: Tourist survey sampling strategy analysis

C.1 Introduction

As described in Chapter 3, it was not possible to use a truly random sampling technique to select tourists for interview. Rather, an approach was adopted which sought to maximise the number of tourists interviewed whilst maintaining as random a sample as possible. This was achieved by moving from tour camp to tour camp in the afternoon after tourists returned from tracking, and seeking to interview as many of them as possible in public areas of the camps (see Chapter 3). This sampling strategy may not have returned a truly representative sample of the tourists visiting gorillas at BINP. In this appendix, several relevant characteristics of the tourist sample are compared statistically with the overall tourist population in order to identify where the tourist sample was or was not representative.

C.2 Methods

The two samples being compared were the tourist interview survey (of 364 individuals, collected from Feb 9th 2004 to Dec 8th 2004) and the registration data collected by UWA from all gorilla trackers from June 24th 2003 to Nov 24th 2004 (7269 individuals). Details of the tourist interview survey are given in Chapter 3. The registration data were taken from the written records of UWA and transferred to a computer for analysis. UWA originally collected data for each tourist on their age, gender, nationality, date of tracking and gorilla group tracked. On my advice, from Feb 8th 2004 they also began recording the camp in which tourists were staying. Trip type and the number of nights stayed at BINP were recorded by me for all tourists tracking on the days that I carried out interviews. Trip type was divided into independent and tour groups for this analysis. Some of these tourists each day went on to be interviewed in full after returning from the forest. This range of data collection techniques gave very different sample sizes for different analyses, and these are detailed in the results section.

The variables used to compare the two samples were tourist age, gender, nationality, tour camp, trip type and number of nights at BINP. In the case of continuous variables (age and nights), the two sample means were compared using *t* tests. In the case of categorical variables (gender, tour camp and trip type) the distribution of individuals between

categories in each sample was compared using χ^2 tests. All analyses were carried out in SPSS 10.1.3.

C.3 Results

Age data were returned for 362 interviewed tourists and for 6235 registered tourists. Those in the interview survey were significantly older on average than those in the overall gorilla tracking population (sample mean = 42.85, population mean = 40.69, $t_{6595} = 2.992$, $p = 0.003$; Figure C.1).

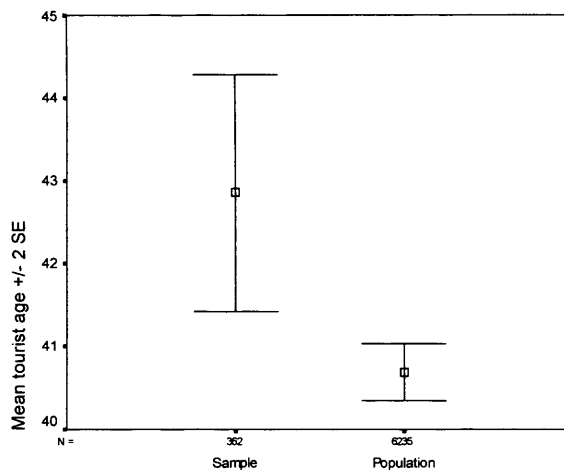


Figure C.1: Mean tourist age (+/- 2 SE) in the tourist interview sample and the overall tourist population

Sex data were returned for 364 interviewed tourists and 7185 registered tourists. There was no significant difference in the gender balance of the two samples ($\chi^2 = 0.033$, $df = 1$, $p = 0.856$).

Nationality data were returned for 364 interviewed tourists and for 7239 registered tourists. There was a significant difference in the balance of nationalities between the two samples ($\chi^2 = 104.378$, $df = 159$, $p < 0.001$; Table C.1). The main discrepancy appears to have been an over-representation of British tourists, and an under-representation of tourists from the USA.

Table C.1: The number and percentage of individuals from different nations in the tourist interview sample and the overall tourist population. Only nations with over 50 individuals in the overall population are shown

Nation	Sample	Percentage	Population	Percentage
Netherlands	61	17.0	909	13.0
UK	116	32.3	1817	26.0
USA	67	18.7	1868	26.7
Canada	12	3.3	272	3.9
Australia	21	5.8	372	5.3
Sweden	5	1.4	150	2.1
Denmark	9	2.5	141	2.0
Belgium	4	1.1	127	1.8
Norway	1	0.3	50	0.7
Germany	17	4.7	306	4.4
New Zealand	2	0.6	82	1.2
South Africa	23	6.4	156	2.2
Japan	0	0	53	0.8
France	4	1.1	104	1.5
Switzerland	3	0.8	69	1.0
Uganda	0	0	90	1.3
Austria	2	0.6	88	1.3
Italy	4	1.1	144	2.1
Ireland	7	1.9	86	1.2
Spain	1	0.3	110	1.6
Totals	359	99.9	6994	100.1

Accommodation data were returned for 363 interviewed tourists and for 3952 registered tourists. There was a significant difference in the balance of accommodation used between the two samples ($\chi^2 = 61.614$, $df = 8$, $p = < 0.001$; Table C.2).

Table C.2: The number and percentage of individuals staying at different camps in the tourist interview sample and the overall tourist population

Camp	Sample	Percentage	Population	Percentage
Gorilla Forest Camp	76	20.9	973	24.6
Mantana	14	3.9	181	4.6
Volcanoes	19	5.2	406	10.3
Lake Kitandara	55	15.2	394	10.0
African Pearl Safaris	50	13.8	371	9.4
Bwindi View Canteen	27	7.4	294	7.4
BCRC	122	33.6	1333	33.7
Totals	363	100.0	3952	100.0

Trip type data were returned for 242 interviewed tourists and for 713 registered tourists.

There was a significant difference in the balance of trip type between the two samples ($\chi^2 = 6.635$, $df = 1$, $p = < 0.010$; Table C.3).

Table C.3: The number and percentage of individuals on different types of trip in the tourist interview sample and the overall tourist population

Trip type	Sample	Percentage	Population	Percentage
Independent	60	24.8	123	17.3
Organised tour	182	75.2	590	82.7
Totals	242	100.0	713	100.0

Data for number of nights stayed at BINP were returned for 363 interviewed tourists and for 747 registered tourists. There was no significant difference in the number of nights stayed between the number of nights stayed by tourists in the two samples (sample mean = 2.50, population mean = 2.49, $t_{1108} = 0.209$, $p = 0.834$; Figure C.2).

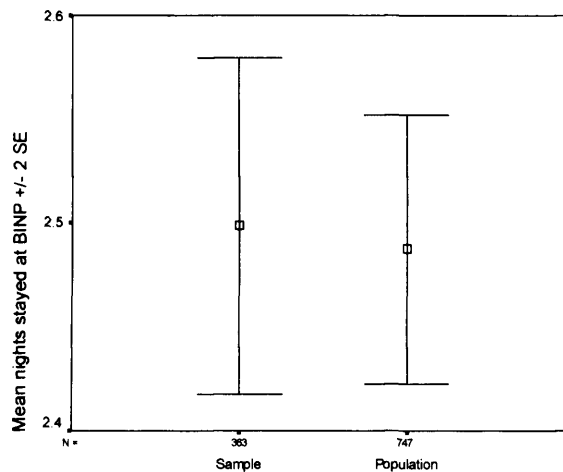


Figure C.2: Mean number of nights stayed at BINP (+/- 2 SE) in the tourist interview sample and the overall tourist population

C.4 Discussion

C.4.1 Why did the samples differ in some respects?

The results presented here demonstrate that in some respects the tourist survey was representative of the wider tourist population, but that in some other important respects it was not. The gender breakdown and length of stay were very similar between the two samples, and this requires no further discussion. However, tourist age, nationality, tour camp and trip type all differed significantly between the two samples. The possible reasons for these differences and their implications are discussed in turn below.

Tourists in the interviewed sample were significantly older than those in the overall population. The difference between the means was not huge (about 2.2 years), but this probably represents some kind of bias in the sample. It is difficult to see how this might have come about. One possibility is that younger tourists were less tired from gorilla tracking and more likely to go back into the forest or into the village for another activity after tracking, and this made it more difficult to find them in their camps. As no tourist who was available ever refused to be interviewed, there could not have been an age bias in the likelihood of agreeing to participate in the survey.

The balance of nationalities in the tourist survey was significantly different from that in the overall tourist population. Particularly over-represented in the interview survey were British tourists, and US citizens were particularly under-represented. That such a bias was

occurring was not clear during fieldwork, and indeed following the pilot phase of the project no such bias was found after statistical analysis at that time. It is possible that more British tourists were keen to find me and participate in interviews because I myself am British. Also, many British visitors came to BINP in large tour groups, and it was sometimes possible to interview many members of these groups sequentially. This may have inflated the proportion of British respondents in the survey. US tourists may have been under-represented because many of them were taking part in bird-watching tours, and these groups were often the most difficult to find for interviews because they tended to be out bird-watching at all times during daylight hours. Some tourists were undoubtedly excluded from the survey because of language difficulties. This was particularly true of visitors from Japan and other Asian countries, who tended to speak poor English. Most European visitors had exceptionally good English and were happy to be interviewed, and in the case of French visitors I was able to carry out the interviews in French if necessary. The number of non-English speaking visitors was generally so low that it was not considered worth translating the interview into other languages.

The balance of tourists across tour camps in the tourist survey was significantly different from that in the overall tourist population. This was most likely a result of a combination of location and the type of trip taken by visitors to the camps. For example, Mantana camp was far away from the others and very rarely occupied, making it difficult to interview tourists there. Volcanoes camp was easily reached, but most visitors there stayed for a very short time, frequently leaving immediately after tracking. This made it very difficult to interview them, explaining the under-representation of these tourists in the sample. By contrast, visitors to Lake Kitandara camp tended to be in large groups which stayed for a long time, making it easy to interview them. Taken together, these factors probably explain the bias in the sample with respect to accommodation.

Finally, the balance of trip types was significantly different between the two samples, with independent travellers over-represented in the tourist survey. This probably reflects the fact that independent travellers commonly stayed at BCRC, which was the easiest camp to locate visitors for interview. Many independent travellers were also travelling alone, and therefore were more willing to spend time speaking with a stranger, as they could be short

of other things to do. These factors probably explain the over-representation of independent travellers in the sample.

C.4.2 Implications of the differences between the two samples

Assuming that the registration data from UWA were accurate (which was likely not always the case), it would appear that the tourist interview sample differed quite substantially from the overall tourist population in several important respects. This was taken into account for the analyses carried out in this thesis, but was not considered a fatal problem. Where statistical analyses were carried out examining links between individual tourist characteristics and their impacts, there was no difficulty, because we would expect the impact variables to co-vary with tourist characteristic variables in the same way within the sample population as in the overall population. The only area of concern was where descriptive statistics describing the interviewed population were scaled up to calculate overall values for the total population. One example of such an analysis in this thesis is the use of mean spending data for tourists to calculate the overall value of tourism to BINP during fieldwork. In that case, to avoid the problem that spending values from the tourist survey may have differed from the overall tourist population, mean values were calculated for visitors to each camp, and then scaled up on the basis of the total number of visitors to each camp. This was considered to be the best approach to take, because spending differed enormously between camps, meaning that discrepancies in the proportion of individuals at each camp would probably have the biggest impact on the total figure calculated. Such possible problems with the tourist sample are recognised and considered wherever relevant throughout this thesis, and the approach adopted to minimise the problem is detailed in each case. As a result of the identification and mitigation of this issue, it is not considered likely that it had any major effect on the outcome of the analyses presented.

Appendix D: Tourist survey data form

The tourist survey data form is shown over the following three pages. This is the printed form as it was used in the survey, except that it has been scaled down for presentation here to conform with the margins required for the thesis. The version used in the field filled the page and had larger fonts.

ID:	Group:	Date:	Time:	Gender:
1) Nationality:	2) Residence:		3) D.O.B.:	
4) Profession:	5) Highest qual.:			
6) No. visits Ug.:	7) Purpose of visit:			
8) Already vis.:			Will vis.:	
9) Nights EA so far:			10) Total nights Ug.:	11) Total trip if app.:
12) Other sites Ug vis.:				
Other sites Ug will vis.:				
13) Chi/gor vis. (place and date):				
Chimp/gor planned (place and date):				
14) Before BINP:	15) Times BINP:		16) Nights BINP:	
17) Where BINP:	18) Where next:			
19) How travel:	Alone	Family:	Friends:	Business:
20) Party size:	Known:	Strangers:		21) All tour?
TOUR 22) Int op if app.:			23/25) Local op.:	
26) Tour begins:			Tour ends:	
27) Tour nights:	28) Other sites on tour:			
29) Included in price:	Trans:	Accom:	Food:	Drinks:
Gorilla perms:	No:	Park actives:	Other:	
30) Price of tour per pers:			31) No. of employees:	
32) Roles/nations:	Driver:		Cook:	
Guide:			Other:	
33) Staff sleeping:	D:	C:	G:	O:
24) Vehicle:	4X4:	Bus:	Overland:	Other:
IND 35) To BINP:	Pub:	Hitch Ts:	Hitch other:	Other:
36) Cost per person:	ALL 37) No. times tracking:			
38) Group + date:	1)	2)	3)	
39) Closest dist:	1)	2)	3)	
40) Gorilla gender:	1)	2)	3)	
Inf/Juv. Ad/SilverB	1)	2)	3)	

41) Duration	1)		2)		3)	
42) How closest?	Tourists		Gorillas:		Other:	
43) How ended?	Gorilla		Shooed:		Tourists:	
Guides moved Ts:			Hour up:		Other:	
44) Av. distance	1)		2)		3)	
45) Camera?						
46) Rules clear?	Dist:		47) Aware before:		Dist:	
Durat:	Health:		Durat:		Health:	
Eating:	Toilet:		Eating:		Toilet:	
48) This year influenza	YES		NO		Don't know	
Measles:	MMR? Single?				Date:	
Yellow fever:						
Polio:						
Tetanus:						
Hepatitis A:						
Hepatitis B:						
Tuberculosis (BCG):						
Rabies:						
49) TB skin test:	YES NO		Result:		Recent date:	
50) TB lung X-ray:	YES NO		Result:		Recent date:	
	24 hrs 2 weeks				24 hrs 2 weeks	
51) Sore throat			Respiratory - cough			
Running nose / cold			Respiratory - wheezing short			
Fever - high temp			Stomach ache			
Fever - aching joints			Vomiting			
Diarrhoea			Other (spec):			
52) Body temperature:						
53) Why Uganda? 1)						
2)						
3)						
54) Security:	Very:		Ad:		Inad: Poor:	
55) Past problems?						
56) Importance:	Tourists:		Cons:		Development:	
57) How choose accom:	Price:		Accom qual:		Food qual:	
Style accom:	Site owned:		No choice:			
Part 2: Date:			Time:			
1) Activities:	Tracking:.....times		Comm walk:		Waterfalls:	
Craft shops:	Song/dance:		Which?		Other:	

2) Spending:		Included in tour?	Spent pers?:	Split:	Site:	Amount / currency:
Accommodation: 1)						
Accommodation: 2)						
Meals 1)						
Meals 2)						
Meals 3)						
Snacks 1)						
Snacks 2)						
Snacks 3)						
Drinks 1)						
Drinks 2)						
Drinks 3)						
Other park activities 1)						
Other park activities 2)						
Other park activities 3)						
Tips 1)	Who?		Split:		Amount:	
Tips 2)	Who?		Split:		Amount:	
Tips 3)	Who?		Split:		Amount:	
Donation 1)	Who?		Split:		Amount:	
Donation 2)	Who?		Split:		Amount:	
Donation 3)	Who?		Split:		Amount:	
	What		Where		How many	Split
						Price per item
Crafts 1)						
Crafts 2)						
Crafts 3)						
Crafts 4)						
Crafts 5)						
Other 1)						
Other 2)						
3) Craft choice:	Price:		Quality:		Shop place:	Comm dev:

Appendix E: Participatory Wealth Ranking Exercises

E.1 *Wealth ranking results*

E.1.1 *Kanyashande village*

The Kanyashande wealth ranking exercise was carried out in the government primary school hall following a Sunday church service. Of the LCIs present and able to participate 4 were female and 6 male, meaning that an even gender balance was not achieved on this occasion. Unfortunately two of the female participants also had to leave before the exercise was completed in order to carry out household chores, so the gender balance was further compromised. The remaining two women participated very actively. The group seemed to understand the concept of the exercise well, and engaged in a lively discussion of wealth and its correlates before embarking on the formal part of the exercise. Once they were asked to come up with ranks, the participants quickly settled on four categories. Criteria for inclusion in each category were drawn up, starting with the richest and working to the poorest. These are given in Table E.1:

Table E.1: Wealth ranking categories and inclusion criteria for Kanyshande village. The Rukiga category titles were those chosen by the respondents. The English translations are my own

Wealth category	Inclusion criteria
Omugeiga (the rich man)	<ul style="list-style-type: none">- Permanent house or semi permanent with good iron sheets- At least 5 acres of land- At least 3 cows- A large banana plantation- Has goats- Has tea- Has pigs- Has chickens- Has a job or other good source of income- Has a tree shamba (eucalyptus)- Is able to educate his children in secondary- Has a motorcycle- Has a bicycle- Has a radio- Has a phone- Has a clock or watch
Omugeiga wakabiri (the second rich man)	<ul style="list-style-type: none">- Has 2 to 5 acres of land- Semi permanent house with iron sheets- Has tea- Has one cow- Has at least 2 goats- Small banana plantation- Has chickens- Has one pig

Omugeiga wakabiri (continued)	<ul style="list-style-type: none"> - Has a bicycle - Has a radio - Has a clock/watch - Is able to educate his children in secondary
Omugeiga wakashatu (the third rich man)	<ul style="list-style-type: none"> - Small land, around 1 acre - Semi permanent house in poor condition - Very small banana plantation - One goat - Small tea shamba, around 1/5 acre - Has a radio - Has one chicken - Has rabbits or ducks - Educates children up to primary level - Has some eucalyptus trees
Omworo (the poor man)	<ul style="list-style-type: none"> - Has very small land only big enough for his house - House roofed with fibres, grass thatch or second hand sheets - Has only 2 banana plants - Has a radio - Can only put his children in primary - Can't clothe his children - Doesn't have any work - Has no animals - Has no land for crops

It seemed that during the development of categories the respondents may have slightly over-classified the richer end of the wealth spectrum (the categories they developed first), leaving the poorer categories rather open-ended and broad in their definitions. This appeared to be reflected in the frequency of households allocated to each rank, with the poorer categories particularly dominant (Figure E.1). The group appeared to be well disciplined when it came to allocating households to ranks according to the ranks which they had developed. Not all households fitted all the criteria exactly, but in general the match was good.

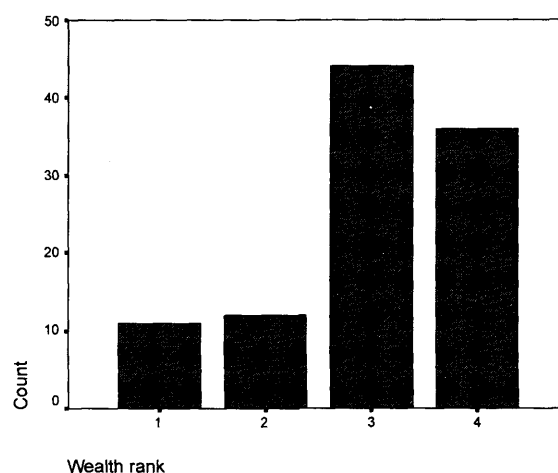


Figure E.1: Frequency histogram showing the number of households in each wealth rank in Kanyshande village. N = 104

E.1.2 Mukono village

The exercise in Mukono village was again carried out on a Sunday after a church service. Nine LC1 councillors were in attendance, four of whom were women. In the absence of the project research assistant the Parish Chief acted as translator. This was quite successful, and he did not seem to influence the outcome of the exercise unduly by participating in the discussion directly. The group began with a rather brief discussion of the meaning of wealth, before drawing up categories. This happened rather more quickly than had been hoped, but the Chief moved things along and it was difficult to prevent this from happening without risking offending him. The group decided on four wealth categories, starting with the richest and working through to the poorest (Table E.2).

Table E.2: Wealth ranking categories and inclusion criteria for Mukono village. Category 1 is the richest, and Category 4 the poorest

Wealth category	Inclusion criteria
Category 1	<ul style="list-style-type: none"> - Has cattle - Has goats - Has tea - Has a permanent house - Has big land - Is able to pay school fees for children - Has a banana plantation - Has a paid job
Category 2	<ul style="list-style-type: none"> - Has goats - Has a small tea plantation - Has a nice semi-permanent house - Has a banana plantation - Has a paid job - Has some land

Category 3	<ul style="list-style-type: none"> - Has a small banana plantation - No tea - Small land - Has a house - Has only 1 goat - Has maybe 3 chickens - Is unable to pay school fees
Category 4	<ul style="list-style-type: none"> - Has only one building for sleeping and cooking (no external kitchen) - Has no tea - Has no banana plantation - Has no land - Is unable to pay school fees - Works for others to earn money for survival

Whilst placing households into categories the group seemed less strict in the application of their definitions than had been the case in Kanyashande. The number of households placed into each category seemed appropriate (Figure E.2), but some of them should strictly have been placed differently under the criteria developed at the beginning of the exercise. The Batwa settlement is located inside Mukono LC1 cell, so the group categorised the Batwa households as well as the Bakiga households in the area. All the Batwa households were placed into wealth category 4; the poorest category.

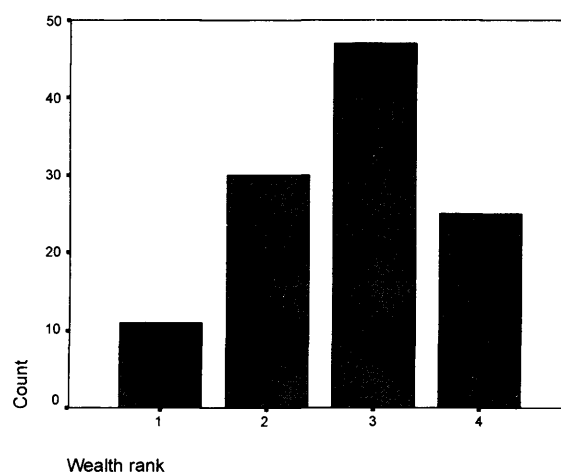


Figure E.2: Frequency histogram showing the number of households in each wealth rank in Mukono village. N = 113

E.1.3 Nkwenda village

The ranking exercise for Nkwenda was carried out in a tea shed on a Sunday after church. The group began as 9, with 4 women, and ended as 11, with 6 women, after two late-

comers had arrived. The main field assistant and the Parish Chief were not present to translate, but luckily one of the respondents spoke good English so he was able to assist me in carrying out the exercise. By this stage of the fieldwork my Rukiga was good enough to conduct most of the explanation myself, but his assistance was very useful during the rapid discussion phase. The group understood the task well and set about it with enthusiasm. They identified four wealth categories, the criteria for which are given in Table E.3. After commencing the categorisation of households, the group decided to reduce the number of categories to three by combining the last two ranks, so households were only actually placed into three ranks.

Table E.3: Wealth ranking categories and inclusion criteria for Nkwenda village. Category 1 is the richest, and Category 4 the poorest

Wealth category	Inclusion criteria
Category 1	<ul style="list-style-type: none"> - 10 Cows - A large farm of around 20 acres - 5 goats - 3 chickens - 1 acre of tea - 1 acre of bananas - A good house – i.e. permanent - Is educated and has a job - Has a phone, a bicycle, a motorbike etc.
Category 2	<ul style="list-style-type: none"> - Semi permanent - ½ an acre of land for non-permanent crops - 2 goats - 2 chickens - A radio - ½ an acre of bananas - ½ an acre of tea - No job - Able to educate the children to the end of primary
Category 3	<ul style="list-style-type: none"> - Semi-permanent house thatched with banana fibres - 1 goat - Just enough land for the house - ¼ acre of bananas - No job - Uneducated - Children unable to go to school - Has a wife
Category 4	<ul style="list-style-type: none"> - Has a hut - Has a wife whom he fails to help - Has children who get no help - Has a very small place to stay - Doesn't have a toilet - Doesn't have fields - Doesn't have clothes - Fails to pay tax

The respondents were not always very strict when it came to placing households into the categories using the criteria given. In particular, the land criterion for category one (having at least 20 acres) was probably too harsh, as only a handful of individuals in the entire study area owned such a large plot. Several households were placed in category 1 by the group which certainly did not have so much land. The spread of households across the categories is shown in Figure E.3.

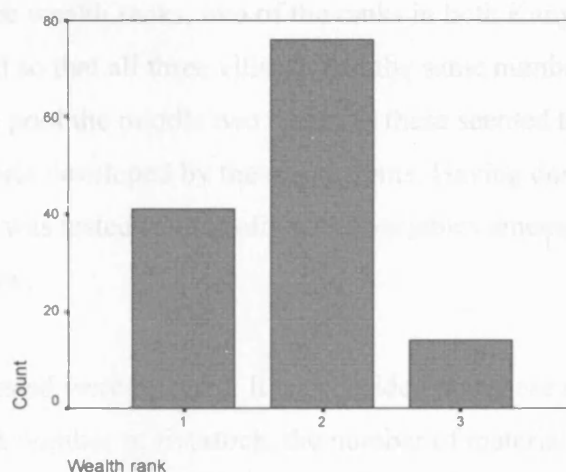


Figure E.3: Frequency histogram showing the number of households in each wealth rank in Nkwenda village. N = 131

E.1.4 Summary of wealth ranking results

The wealth ranking exercises generally went very well, and provided useful results which gave additional insights into locally relevant dimensions of wealth which could not be captured by asset surveys alone. Several factors seemed to be highly consistent between villages when the groups were discussing criteria for category membership, such as the way in which houses were constructed. In most cases the richest category always included households with permanent (brick) walls, the second category had semi-permanent (mud-walled) houses with good iron sheet roofs, the third category had semi-permanent houses with poor iron sheet roofs, and the poorest category had houses with thatch or fibre roofs. Some interesting factors which were often discussed by the groups were not subsequently included in the criteria which they drew up. For example, in several cases young men with full time employment (and therefore a large cash income) were placed in a low wealth rank. When asked why this was, respondents would reply that because the man was unmarried

and had no children he was poor, regardless of his cash-rich status. This is a good example of a cultural dimension of wealth which would be missed entirely by an asset survey.

E.2 Inter-village ranking consistency and pooling analysis

E.2.1 Methods

Before the inter-village consistency of the rankings could be confirmed (in order to allow a single ranking variable to be used in GLMM analysis), it was necessary to have the same number of ranks in each village. Because the respondents in Nkwenda village decided in the end to use only three wealth ranks, two of the ranks in both Kanyashande and Mukono villages were combined so that all three villages had the same number of ranks. In both cases it was decided to pool the middle two ranks, as these seemed to be the most similar on the basis of the criteria developed by the respondents. Having done this, the inter-village consistency of ranking was tested statistically using variables amenable to analysis. This process is detailed below.

First, the assets to be tested were selected. It was decided that these should be those variables measuring the number of livestock, the number of material assets, and the amount of land owned by each household, as these had most consistently proven to be important in the wealth ranking exercise, and were also amenable to statistical analysis. To ensure that the response variables were normally distributed, the recorded values for all livestock variables and all material asset variables were added together for each household, giving test variables called ‘total livestock’ and ‘total material assets’. Total acreage owned was taken directly from the IDHS. Next, ANOVA tests were carried out in R 2.1.1, with each response variable being modelled against the terms wealth rank, village, and the interaction between them. For pooling to be justified, it was necessary for wealth rank to be significant in each case, but for the interaction to be insignificant (meaning that wealth ranks were consistent across villages). If village were significant this would mean that there was more variance between than within villages, which would be interesting but would not make pooling unjustified.

E.2.2 Results

There was significantly more variance in the total number of livestock owned by the 138 households in the in-depth survey between than within both villages and wealth ranks

(Table E.4; Figure E.4). However, the interaction between villages and wealth ranks was not significant (Table E.4).

Table E.4: Coefficients for ANOVA model with total number of livestock owned. N = 138

Term	<i>df</i>	<i>F</i>	<i>p</i>
Village	2, 129	3.437	0.0351
Wealth	2, 129	13.564	< 0.001
Village x Wealth	4, 129	1.151	0.336

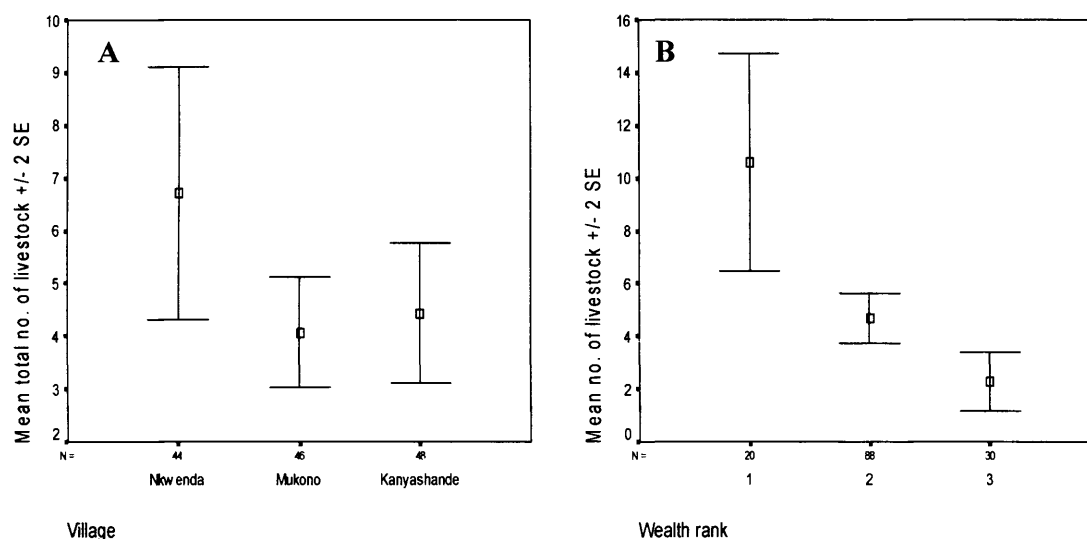


Figure E.4: Error-bar plots showing the mean number of livestock (+/- 2 SE) owned by households in the in-depth survey by (A) village and (B) wealth rank

There was significantly more variance in the total number of material assets owned by the 138 households in the in-depth survey between than within both villages and wealth ranks (Table E.5; Figure E.5). However, the interaction between villages and wealth ranks was not significant (Table E.5).

Table E.5: Coefficients for ANOVA model with total number of assets owned. N = 138

Term	<i>df</i>	<i>F</i>	<i>P</i>
Village	2, 129	9.451	< 0.001
Wealth	2, 129	27.496	< 0.001
Village x Wealth	4, 129	1.029	0.395

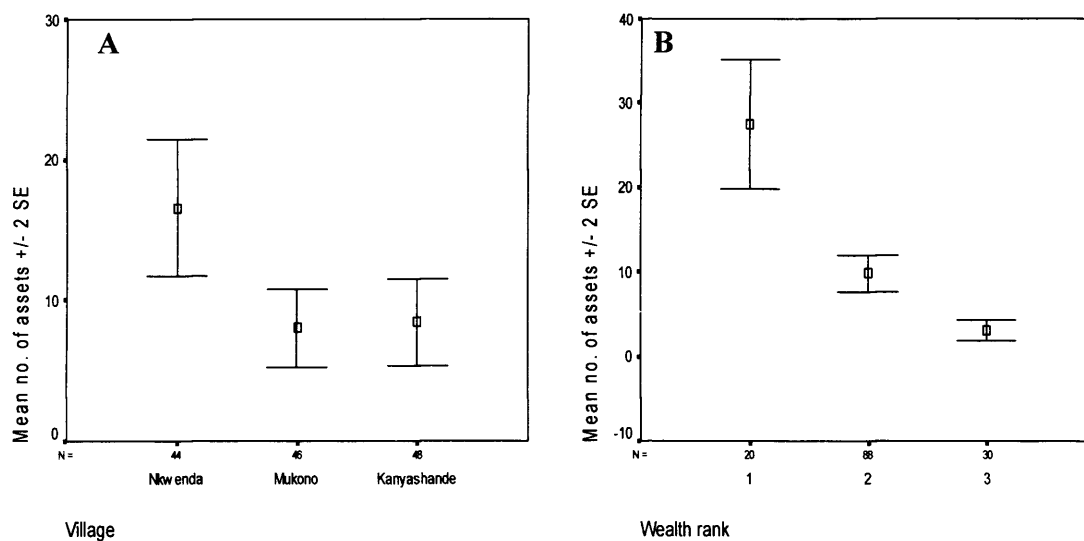


Figure E.5: Error-bar plots showing the mean number of material assets (+/- 2 SE) owned by households in the in-depth survey by (A) village and (B) wealth rank

There was significantly more variance in the total amount of land owned by the 135 in-depth survey households for which data were available between than within wealth ranks (Table E.6; Figure E.6). However, the village term and the interaction terms were not significant (Table E.6).

Table E.6: Coefficients for ANOVA model with total amount of land owned. N = 135

Term	<i>df</i>	<i>F</i>	<i>P</i>
Village	2, 126	2.126	0.124
Wealth	2, 126	16.319	< 0.001
Village x Wealth	4, 126	2.565	0.081

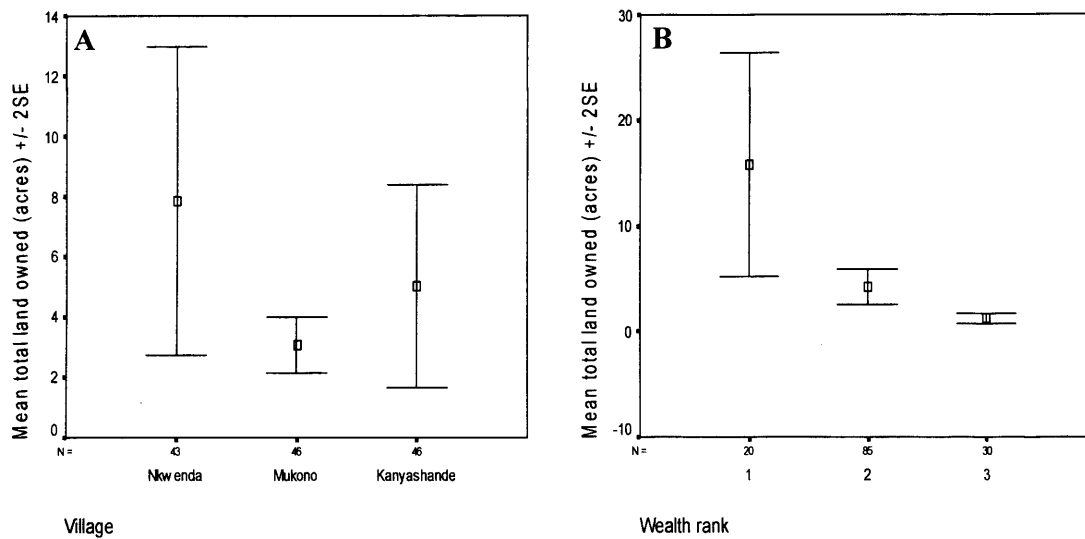


Figure E.6: Error-bar plots showing the mean amount of land (in acres; ± 2 SE) owned by households in the in-depth survey by (A) village and (B) wealth rank

E 2.3 Discussion

The results of the ANOVA analysis strongly support the pooling of wealth ranks across villages. For all the test variables the results were as required to justify pooling; wealth ranks were clearly different from one another, but they were consistent across villages. On the basis of these results the 3 composite wealth ranks for Nkwenda, Mukono (including the Batwa) and Kanyashande were combined and used for GLMM analysis in Chapter 5.

The results of the analysis for the variable village are also interesting. For two of the test variables (livestock and assets) there was significantly more variance between than within villages, and the graphical representations of the data showed that in all three cases Nkwenda was the richest village. This adds further strength to the suggestion from the disaggregated asset data analysed in Chapter 5 that Nkwenda village was richer than the other two in-depth survey villages. This is interesting, because Nkwenda was the village closest to the park gate, and within which six of the seven tour camps in the study area were located.

Appendix F: Ngamba Island visitor health requirements

The text below is given to all visitors to Ngamba Island who go on a forest walk with the chimpanzees. These walks usually involve considerable physical contact with the chimpanzees, giving a lot of potential for disease transmission (D. Cox, *personal communication*). The text was provided by Debbie Cox of the Jane Goodall Institute, which manages the sanctuary on Ngamba Island along with other partner organizations which make up the Chimpanzee Sanctuary & Wildlife Conservation Trust (CSWCT).

Vaccinations and tests required

(We have stated what we believe to be the validity of most vaccines, after which time your doctor/health clinic should be able to recommend further vaccinations and/or booster shots.)

(1) **Hepatitis A** (valid 20 years)

(2) **Hepatitis B** (valid 5 years)

(3) **Measles vaccination** (We will need to see medical proof of your immunity to measles, through either a recent vaccination or a blood test titer result, stating your immunity to measles. Unfortunately even if you have had the disease or a vaccine as a child we will need to see a blood test result, again stating/showing your immunity to measles. Physicians are now debating whether the measles vaccine you had as a child still has a lifetime immunity. You can also receive the vaccine as an adult which often comes in the form of MMR (mumps, measles and rubella). Consult with your doctor for further advice. Please note that you **MUST** have supporting documentation to prove your immunity to measles.)

(4) **Meningococcal meningitis** (menomune vaccine - covers A, C, W & Y strains) (valid 3 years)

(5) **Polio vaccination** (valid 10 years)

(6) **Tetanus vaccination** (valid 10 years)

(7) **Yellow fever** (valid 10 years)

(8) **Tuberculosis (TB) test** - negative result - this test can be done through your doctor or laboratory. It usually takes three days. They do a skin reaction test (sometimes called a mantoux test) on the first day and you return 72 hours later to have the reaction read. If the reaction is of concern, your doctor/laboratory may recommend a chest x-ray/sputum test or other.

If you have had the BCG vaccination as a child, your test could result in a positive reading. In which case, because we still require proof that you do not have TB, we will require you to have a chest x-ray and we will need to see the (paper) result, clearly stating that you do not have TB.

Please also note that your TB test must have been done within the last six months prior to your arrival at the sanctuary.

All vaccines must be at least two (2) weeks old prior to arrival on the island (as this is the length of time it takes for your immunity levels to react).

While we realise that this is more than what is recommended for Africa, these are necessary in order to have contact with the chimps on Ngamba Island. This is to protect them from diseases that you may bring to the island. All of our chimpanzees receive yearly healthchecks and have been tested/vaccinated for the above and have also tested negative to the HIV virus.

Please ensure that before you leave the doctors surgery/laboratory, that you check that all of your vaccinations are recorded correctly.

Failure to provide supporting documentation of the above requirements, will result in you not being permitted to do a forest walk with the chimps.